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California's Computer Magazine

APRIL 1988 • 42

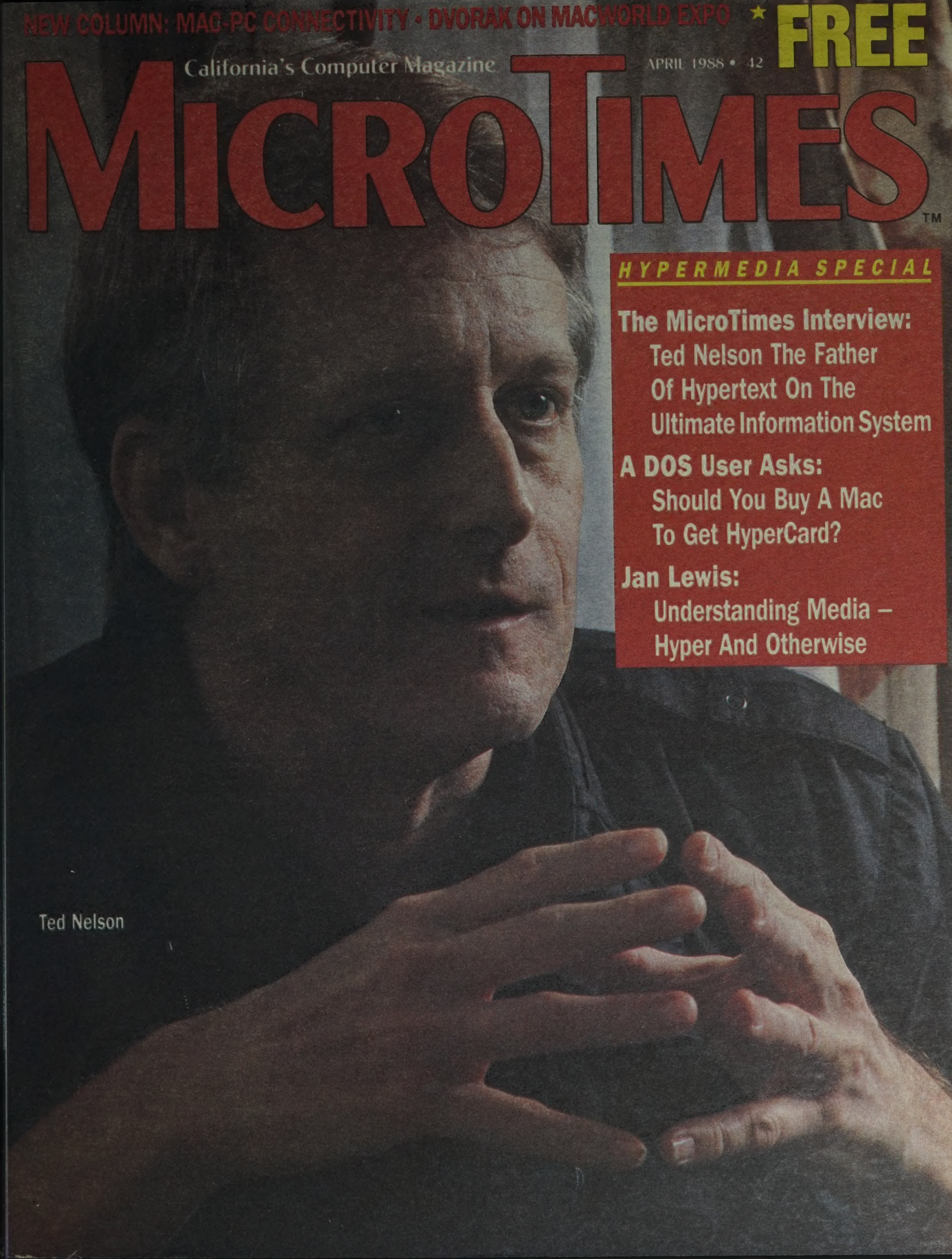
# MicroTimes™

HYPERMEDIA SPECIAL

**The MicroTimes Interview:**
Ted Nelson The Father Of Hypertext On The Ultimate Information System

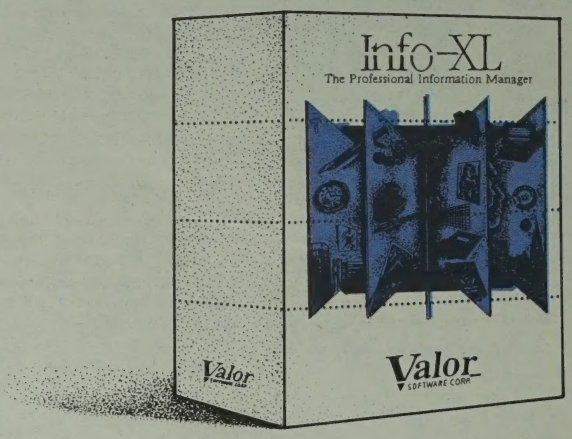
**A DOS User Asks:**
Should You Buy A Mac To Get HyperCard?

**Jan Lewis:**
Understanding Media – Hyper And Otherwise



Ted Nelson

# IF YOU NEED TO MANAGE LIMITLESS INFORMATION, YOU'RE LIMITED TO ONE CHOICE.

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The Amstrad PC-1640 comes with MS-DOS® Version 3.2 to run thousands of popular software packages. It also runs GEM® windowing software and comes with other GEM programs. It's available in single floppy, dual floppy, and 20 Megabyte hard drive versions. And though the unique Amstrad motherboard eliminates the need for costly add-on boards, three expansion slots are provided for enhancements such as networking capabilities.

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APRIL 1988 ISSUE #42
MICROTIMES

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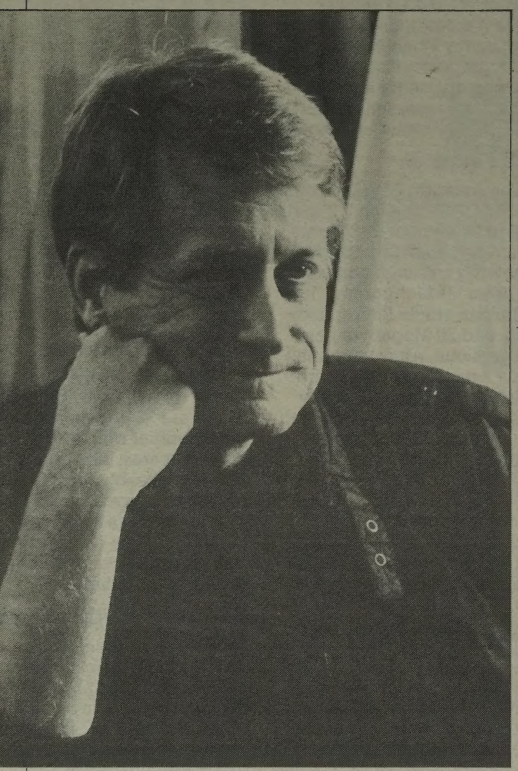

COVER AND CONTENTS PHOTOS © 1988 BY MICHAEL JAY

# 34 Ted Nelson And The Ultimate Information Machine

**By David Gans**

Twenty-odd years after he conceived the idea of hypertext, Nelson is garnering new respect as the technology becomes able to support his vision. In this interview, the outspoken Nelson holds forth on the need for hypermedia, the Xanadu global publishing system, and what's wrong with the world, computer and otherwise.

**After a couple of decades of crying in the wilderness about his strange concept called "hypertext," Ted Nelson is finding a newly receptive audience in today's industry.**

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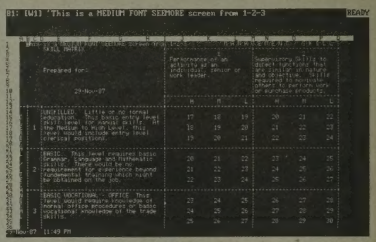
**46 A DOS User Asks: Should You Buy A Macintosh To Get HyperCard?**
*By Birrell Walsh*
The author is in favor of the notion.

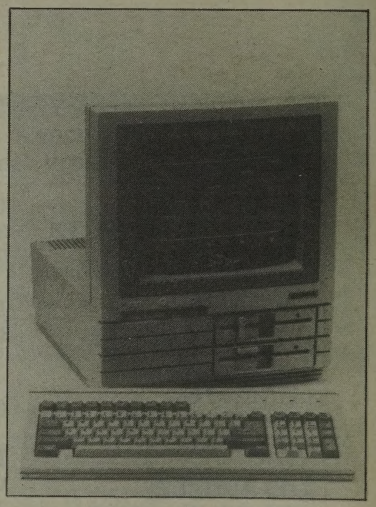
## HANDS ON

**40 SeeMORE**
*By Woody Liswood*
If you've got giant spreadsheets on a small screen, here's help.



**SeeMORE lets you display your spreadsheets in four different sizes.**

**44 The Fujitsu FPG-310 Plotter**
*By Woody Liswood*
High quality and resolution, low price.



**The Cordata WPC CS40 features an attached monitor and a small footprint that frees up desk space.**

**54 The Cordata WPC CS40**
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Good features and performance, affordable price on this PC compatible.

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*By Helmi Kobler*
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# You Can Whisper About How Good This Printer Is.

That's because Toshiba's P321SL Printer will raise your productivity, not your voice. It has a selective quiet mode and standard features you will rave, but not yell about. Taking full advantage of a 24 x 42 character matrix that's unequaled in the industry, other 24-pin printers, (not to mention any 9-pin relatives), will have to play follow the leader.

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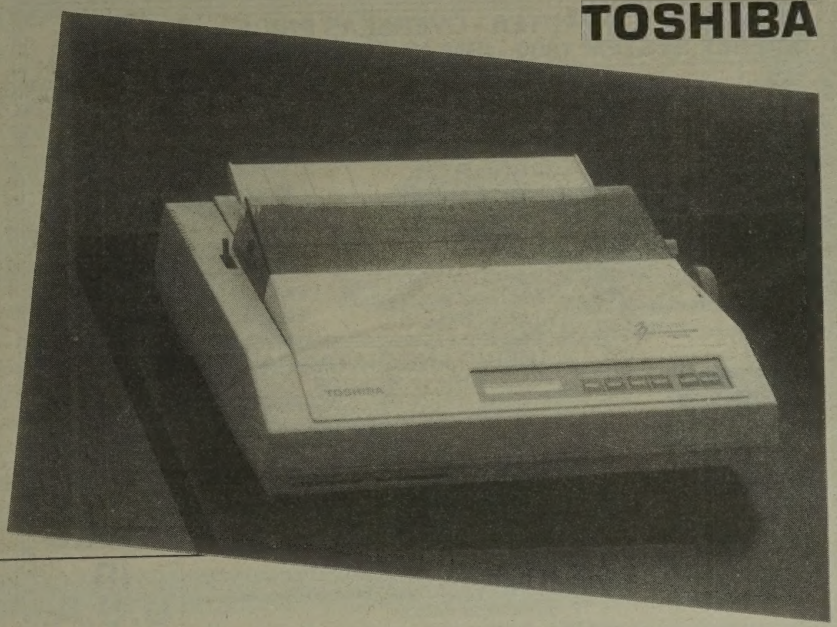

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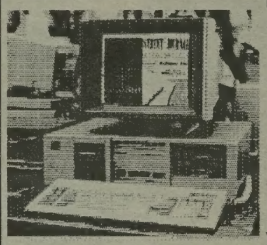

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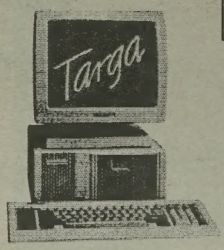


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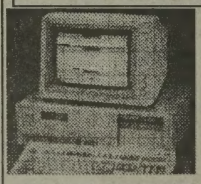

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**ART STAFF** David Cunha, Tim Levin, Lisa Lusk, Missy Mote, Heidi Sommer, Deborah Venezia
**CAMERA OPERATOR** John Moorehead
**NEWS EDITOR** Paul Hoffman
**CONTRIBUTING EDITORS** Robert D. Athey, Jr., Bennett Falk, Helmi Kobler, Matthew Leeds, Michael Markowitz, Brock Meeks, Ken Milburn, Jeff Spurrier, Birrell Walsh, Jim Wolcott, Wayne A. Yacco
**CONTRIBUTING WRITERS** Sue Albert, Lenny Bailes, David Batterson, Woody Liswood, Ben Means, Jean Means, Nancy Mulvany, Aubrey Pilgrim, Sharon Rufener, Stephan Wickham
**CONTRIBUTING PHOTOGRAPHERS** Marc Franklin, Ken James, Pat Johnson, Ann Summa
**EDITORIAL CONSULTANTS** Don Hamilton, Pat Hamilton
**TYPESETTING** Image Factory, The Typesetting Shop, Inc.

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This Vol. 5. No. 4, April 1988. Whole No. . MicroTimes, California's Computer Magazine, is published by BAM Publications, Inc., 5951 Canning St., Oakland, CA 94609. Phone (415) 652-3810. Los Angeles Office, 1800 N. Highland, Suite 220, Hollywood, CA 90028. Phone (213) 467-7878. San Jose Office, 36 Harold Ave., Suite 8, San Jose, CA 95117. Phone (408) 244-4400. Anaheim Office, 800 S. Brookhurst, Suite 1F, Anaheim, CA 92804. Phone (714) 776-2900. MicroTimes™ is © 1988 by BAM Publications, Inc. Subscriptions rate: 12 issues, U.S.: 3rd Class $24 (Allow 3 to 4 weeks for delivery), 1st Class $50 (Allow 1 to 2 weeks for delivery). MEXICO & CANADA: Surface Mail $40 (Allow 4 weeks for delivery). Air Mail $65 (Allow 1 week for delivery). OVERSEAS: Surface Mail $40 (Allow 6–10 weeks for delivery). Air Mail $160 (Allow 1 week for delivery). To receive sample issues, please send $2 ($4 for overseas) to cover postage costs. Back issues are $4 each.


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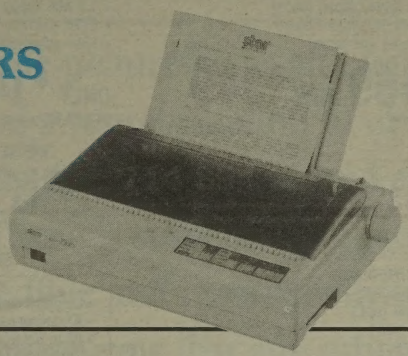

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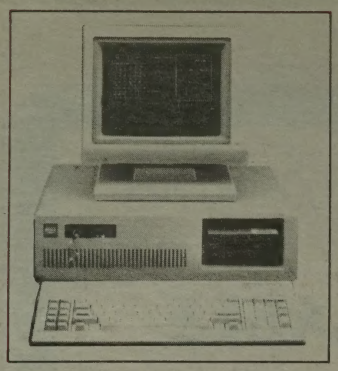

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BUT JAN LEWIS SAYS . . .

# Understanding Media, Hyper- And Otherwise

**By Jan Lewis**

In the first part of this series, I analyzed the evolution of communication by categorizing seven key technologies that gave our species new means of communicating experience and knowledge. Each of these media democratized information by making it more accessible to more people. In this part of the series, we'll examine each of the seven media and explore how each altered the dynamics of communications. Our aim here is to understand the past in order to better predict and prepare for the future.

The seven key media that we outlined last time are pictureforms, speech, letterforms, printing press, electronic information, imageforms and hypermedia.

The first three were fully developed before my time. The latter four are still evolving. In this column, we'll examine how each of these are changing the dynamics of creating and accessing information.

Let's lay the groundwork with explanation of some basic concepts.

## Distribution And Ease Of Access

Democratizing information simply means extending access to more people. There are two ways to do this: by extending the physical or logical distribution of information, and by improving the usability of the information once it has been distributed. All seven significant media alter distribution and/or ease of access. (Distribution and other factors of either omission or commission affect ease of access. If information is hard to access for any reason, it is a de-democratizing factor.)

*Jan Lewis is a well-known industry analyst and president of the Palo Alto Research Group, a consulting firm for the microcomputer industry. This article has been reprinted with permission from* Computer Insider, *PARG's newsletter.*

Most media we encounter will be a combination of more than one of these media. Television, for instance, is imageform, but it is broadcast electronically. A drawing of a widget is a pictureform, but it may be sent over a fax machine electronically. Computer based icons are pictureforms stored in digitized electronic format.

## Abstraction Of Experience And Knowledge

Pictureforms include any pictorial or iconic representation of information. A cave drawing is an example of a pictureform. So is the Mona Lisa. Today we look at cave drawing as primitive and ineffective. At the time, though, the experience was revelation, miracle, nightmare — more vivid than *Night Of The Living Dead.*

Letterforms are a level of abstraction beyond pictureforms. All forms of writing and alphabets fall into this category. With fewer symbols (26 in our alphabet, for instance) you can represent an almost infinite amount of information. Letterforms are intrinsically meaningless, taking on meaning by common convention rather than common experience.

Speech or storytelling, while it has more temporal limitations than letterforms or pictureforms, incorporates more sensory stimuli. Gestures, facial expressions, tone of voice, sound all enrich the experience in the imagination of the audience. The development of speech was also a civilizing influence. Speech first allowed individuals to relate and pass on history, celebrations, laws, etc. across geography and time to anyone who knew its ritual.

## Mass Production

Like letterforms and pictureforms, storytelling has limitations. Letterforms, pictureforms and speech may have been effective methods of communication, but without any way to store and mass-produce them, its audience, or user base, remained limited.

**While pictureforms and letterforms are a representation of of reality, imageforms are perceived as reality. There is something much more credible and more involving about imageforms that any other media.**

The printing press brought a quantum leap to communication. It was the first technology that allowed for mass-produced information. A picture on a cave wall could exist once. More than one person could experience it, but it only had one existence.

You couldn't photocopy a picture of a battle portrayed on the wall of a cave and distribute copies. The same with speech. You could relate a story orally, for instance, and many people at a time could listen to it. But it still only had one occurrence. You had to be there. The printing press, on the other hand, allowed the physical creation of more than one occurrence of a story, i.e. mass production.

## Trivial Duplication

Then came electronic representation and distribution of information. This one really made a difference. For the first time, information could be not only mass-produced, but duplication was trivial.

To illustrate this, consider publishing an essay in a newspaper. The newspaper expands your reach since many copies can be distributed. Nevertheless, some marginal amount of resources is required for every paper produced. For each additional paper, something material has to come off of a production line, get put into a truck, and get delivered to a newsstand or a user. Paper and ink are consumed, as is space on the truck and at the newsstand.

In the process of mass production, it's possible (and in fact, common) to count the number of copies in existence. Contrast this with putting that same essay onto the electronic networks.

Infinite copies could be spun off with no cost or effort whatsoever on the part of the creator. And with enough gateways or a large enough network, that essay could blanket the world within seconds.

## Surrogate Experience

Imageforms — film, video, audiotape, photographs, etc. — impact on the experience of the audience in a

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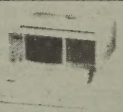

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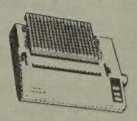

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**Access to massive databases on compact disks or through phone lines is changing the economics of information delivery, but hypermedia will change how effectively we use it.**

more vivid fashion. While pictureforms and letterforms are a representation of of reality, imageforms are perceived as reality. There is something much more credible and more involving about imageforms that any other media.

Imageforms increase distribution of storytelling the way movable type increases the distribution of letterforms — by being mass produceable. Take video, for example. Videotapes have similar distribution economics as books. You might say that video is to storytelling what movable type is to writing.

The first imageform developed was photography. This medium captured only visual data. The early implementations of film also captured only visual data. Later, imageforms would evolve to include sound and time.

Until photography, any reproduction of sensory experience was the reproduction of a representation of that experience — either an iconic or a language-based representation. With photography you could not only reproduce the representations of sensory experience, but could reproduce the appearance of experience itself. This is the essence of imageforms: "surrogate" experience.

To illustrate this difference, let's say there is a fire in a village. In the early days of human communication, that story could be communicated by a person going to the next town and relating that story, or by representation of the story using drawings or letterforms. With imageforms, the story of a fire in a town could actually be communicated by bringing cameras and microphones to the scene and reproducing the actual visual and audial experience itself.

Imageforms can be mass-produced, like videotapes or compact disks. Or by using broadcast technology, they can be trivially duplicated.

### Thoughtforms

The previous six media democratize information primarily by increasing distribution, but none really provide improvement in the ability to use the information. Hypermedia, on the other hand, do. Access to massive databases on compact disks or through phone lines is changing the economics of information delivery, but hypermedia will change how effectively we use it.

Hypermedia deal with the topology of information. Think of a "storyline" in any of the previously mentioned media, but with accommodation made for every conceivable tangent. Impossible, you say. Every possible tangent that could arise when reading every article in *Time* magazine would be impossible to print and unusable if they tried. Yet even with *Time*, there is some attempt at accommodating the way we think by providing a table of contents, which lets the reader do some level of shaping the "information space" contained in its pages.

The universe is an information space. Every other body of knowledge is a subset. But in all cases, information is multi-dimensional. Real information goes off in every tangent possible at every place possible. Through the use of one or more of the seven key media, we communicate pieces of that information space as knowledge. When we relate knowledge, we must retrofit our multidimensional knowledge space into a flat linear package. A book, a videotape, a speech, a television show — each requires that both the creator and the consumer change their associative thinking patterns to fit the limitations of the media.

In contrast, hypermedia allow the user to shape the media to fit his way of thinking, rather than vice versa. Human thinking is multidimensional. Since hypermedia accommodate "tangents," they eliminate linear media as a constraining factor. As a technology, the real challenge is data capture and storage, the tools to create a multidimensional information space, and the tools to easily navigate through it.

Just as imageforms communicate visual and audio data — sensory experience, hypermedia communicate mental processes and linkages — thinking experience. Since electronic media are starting to be able to carry immense amounts of information, it is necessary that it be accessible. Hypermedia provide the indices, the linkages, the associations, and the organization processes that allow users to follow their own logic, rather than be at the mercy of the librarian. Or of Big Brother. □


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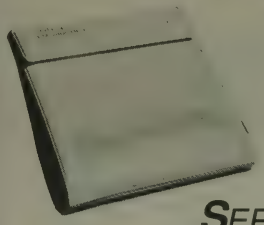

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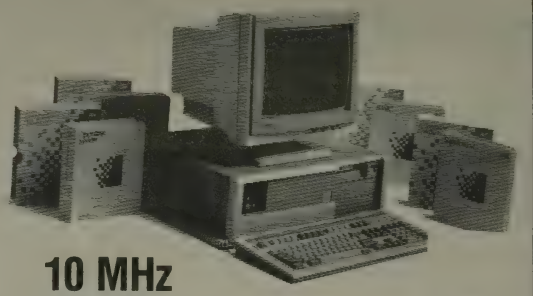


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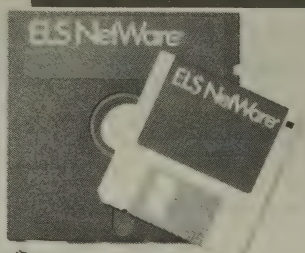


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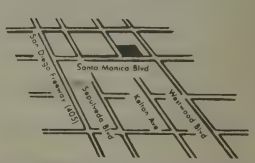

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**February 27 Computer Swap Meet.** Los Angeles County Fairgrounds, Pomona. Call RK Productions at (800)252-7927 for information.

**February 29–March 2 Simulation Performance Seminar.** Technology Transfer Institute, Santa Monica. Call (213) 394-8305 for more information.

**March 5 Orange County Computer Swap.** Orange County Fairgrounds, Costa Mesa. Contact Microshows (800) 433-7469.

**March 7 Newsletter Editing Design and Production One-Day Seminar.** San Diego. Contact Promotional Perspectives at (313) 994-0007.

**March 9 Newsletter Editing Design and Production One-Day Seminar.** Orange County. Contact Promotional Perspectives at (313) 994-0007.

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**March 14–16 OSI & ISDN Seminar.** Technology Transfer Institute, Santa Monica. Call (213) 394-8305 for more information.

**March 14–17 Queueing Systems Seminar.** Technology Transfer Institute, Santa Monica. Call (213) 394-8305 for more information.

**March 19 Computer Swap Meet.** Los Angeles County Fairgrounds, Pomona. Call RK Productions at (800)252-7927 for information.

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**March 20 The Mac Show.** Ambassador Hotel, Los Angeles. For information call (213) 276-1577.

**March 20–23 ADAPSO 68th Management Conference.** Marriott Desert Springs Hotel, Palm Desert. Call (703) 522-5055 for more information.

**March 22 Newsletter Editing Design and Production One-Day Seminar.** Burbank. Contact Promotional Perspectives at (313) 994-0007.

**March 24 Newsletter Editing Design and Production One-Day Seminar.** Los Angeles. Contact Promotional Perspectives at (313) 994-0007.

**March 25 Newsletter Editing Design and Production One-Day Seminar.** Los Angeles. Contact Promotional Perspectives at (313) 994-0007.

**March 26 San Bernardino Computer Show.** National Orange Show Grounds. Contact Golden Gate Shows (415) 388-8893.

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**March 28–31 World Congress On Computing.** McCormick Place, Chicago, IL. Contact The Interface Group, 300 First Ave., Needham, MA 02194. (617) 449-6600.

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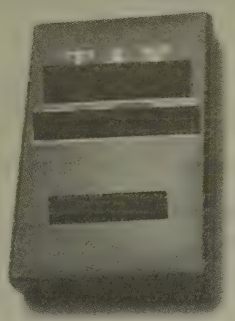

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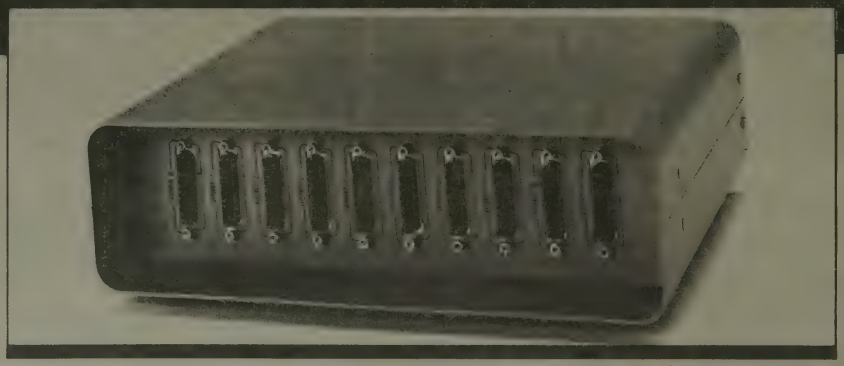

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**April 9 Computer Swap Meet.** San Diego County Fairgrounds, Del Mar. Call RK Productions at (800) 252-7927 for information.

**April 9 Ventura Computer Show.** Ventura Fairgrounds. Golden Gate Shows, (415) 388-8893.

**April 21–22 Desktop Publishing Seminar.** San Diego. Contact the Association For Systems Management (ASM) at (216) 243-6900.

**April 23 Computer Swap Meet.** Los Angeles County Fairgrounds, Pomona. Call RK Productions at (800) 252-7927 for information.

**April 25–29 Advanced Topics In Artificial Intellegence.** Computer Science Short Course. UCLA Extension (213) 825-1047.

**May 7 Ventura Computer Show.** Ventura Fairgrounds. Golden Gate Shows, (415) 388-8893.

**May 9–12 COMDEX.** World Congress Center, Atlanta, GA. Contact The Interface Group, 300 First Ave., Needham, MA 02194. (617) 449-6600.

**May 10–13 The Application Of Fault Tolerance Technology.** Computer Science Short Course. UCLA Extension (213) 825-1047.

**May 13–14 Spring Computer-Using Educators (CUE) Conference.** Town & Country and Torrey Pines High School in San Diego. For further information contact Computer-Using Educators at (415) 328-2248.

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*News about user group meetings and other regularly scheduled activities should be sent to User Group Network at the same address.*


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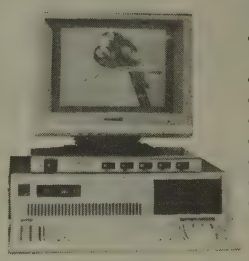

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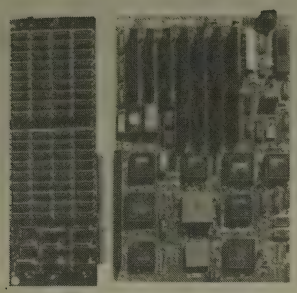

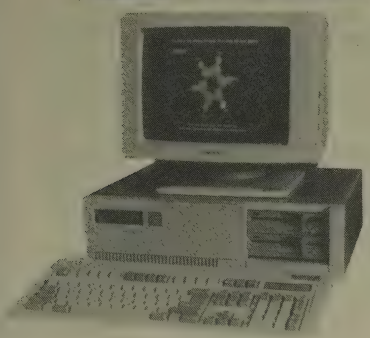

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|---|---|---|
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By Paul Hoffman

# Apple Ships A/UX; Ashton-Tate Announces dBASE IV, Acquires Ann Arbor

## Apple Ships UNIX Operating System for Mac II

A/UX, Apple's version of UNIX, was formally released at the UniForum convention in Dallas last month. The long-awaited program immediately generated a great deal of interest from many parts of the UNIX community. Many Apple watchers expect A/UX to become one of the best-selling versions of UNIX this year, which would in turn increase Apple's sales of Mac IIs. A/UX allows UNIX users to run many standard Macintosh programs using the familiar Macintosh interface.

When Apple announced A/UX almost a year ago, they expected it to ship last August. The delivery was delayed significantly due to the complexity of mixing the UNIX system with Macintosh's capabilities. Even with the delay, Apple did not get all the features they wanted in the first release, and has promised that there will be regular updates that will add functionality. This matches their recent trend in releasing new versions of the Macintosh operating system approximately every six months.

The Apple announcement was one of the most-discussed topics at the UniForum show (see below). Although A/UX has only a few features that are different from UNIX versions from other hardware vendors, the cost of a Mac II running A/UX is quite low relative to other systems of equivalent power. The additional ability to run Macintosh programs makes the system very attractive to people who want the power and ease-of-use of the existing base of Macintosh programs, but also want the power of the high-end programs that are only available under UNIX.

A/UX comes with the full complement of AT&T utilities, including the documentor's workbench for creating documents and the programmer's workbench for programmers. A/UX is based on UNIX System V.2.2, conforms to the System V Interface Definition (SVID), and has passed AT&T's System V Validation Suite (SVVS). Apple has added extensions from the popular Berkeley 4.3 version of UNIX as well.

Apple added many features that are absent in many UNIX systems in order to both differentiate the Mac II and to make the system easier to use. People writing UNIX programs have easy access to the Macintosh Toolbox, the part of the system that creates the Mac's user interface. Thus, a company that is converting its software to A/UX will be able to make their program look like a regular Macintosh program. A/UX comes already loaded on hard disks, reducing the need for tapes. Apple also included utility software to automatically configure the system when new hardware is added and to recover gracefully from system failures. These two areas have always been sore points for users of other versions of UNIX. Apple's additions allow less technical people to use A/UX.

Many UNIX software vendors joined Apple during its A/UX announcement. The three top data base manufacturers announced their support for A/UX and the Mac II as a data base platform. Oracle, Informix, and Ingres all said that they intend to port their products to A/UX in the very near future, and Informix was showing already-ported versions of many of its software products. In addition to these announcements, other large UNIX houses announced support for A/UX. A/UX will have a large number of popular programming languages. Alsys announced that it has already ported its validated Ada compiler to A/UX, Franz announced that Allegro Common LISP will be available soon, and UniSoft announced C, FORTRAN, and Pascal compilers. The Grasshopper Group is making Sun's NeWS windowing system available under A/UX.

UniSoft was the company that was helping Apple develop A/UX, and it came under a great deal of scrutiny due to the lateness of the operating system and the fact that many features announced last year did not appear in the product. UniSoft

*Paul Hoffman is a freelance writer who has written five books about computers.*

**Dvorak Named Readers' Choice**

In a recent poll by *Micro Media Notes*, published by Cambridge Communications, John C. Dvorak was chosen over other leading industry observers as the readers' favorite columnist. Completing the statement "The columnist or commentator I pay most attention to is..., 22% of the readers responding chose Dvorak. Stewart Alsop and Jim Seymour tied with 14% each, and the remaining 50% of the vote went to a field including Bill Machrone, Esther Dyson, Eric Sandberg-Diment, Ed Bride and Peter Norton.

Congratulations to Dvorak as he continues to outrage and delight readers from coast to coast.

*— eds.*

**Correction:**

In our MicroTimes 100 listing (January 1988), we inaccurately rendered the name of Mr. William Lohse, Ziff-Davis Group Vice President in charge of *PC Magazine*, *A+*, and *MacUser*, as David Loese. We sincerely apologize to Mr. Lohse, Ziff-Davis and any others who may have been inconvenienced by this error.

*— eds.*

## Kenfil Announces Top Software Sellers

### BUSINESS & PRODUCTIVITY —MS-DOS

| Last Month | March | |
|---|---|---|
| 1 | 1 | Turbo Tax |
| 2 | 2 | WordPerfect |
| 3 | 3 | Quattro |
| 6 | 4 | Turbo Pascal 4.0 |
| 5 | 5 | Managing Your Money |
| 4 | 6 | Turbo C |
| 7 | 7 | FormTool 2.0 |
| – | 8 | Paradox |
| 12 | 9 | Dac-Easy Accounting |
| – | 10 | LapLink Plus |
| – | 11 | MathCAD |
| 9 | 12 | WordPerfect Library |
| 15 | 13 | Clipper |
| – | 14 | Brooklyn Bridge |
| 13 | 15 | GEM Draw Plus |

### UTILITIES—MS-DOS

| Last Month | March | |
|---|---|---|
| 1 | 1 | Norton Utilities Advanced |
| 8 | 2 | Direct Access |
| 5 | 3 | Fastback Plus |
| 7 | 4 | Mace Utilities |
| 4 | 5 | Disk Technician Plus |
| 6 | 6 | Sideways |
| 3 | 7 | Norton Utilities 4.0 |
| 12 | 8 | DESQview |
| 9 | 9 | Disk Optimizer |
| 10 | 10 | Print Q |
| 11 | 11 | PC Tools |
| 2 | 12 | XTree Professional |
| – | 13 | Norton Editor |
| 14 | 14 | SeeMORE |
| – | 15 | Software Carousel |

### MACINTOSH

| Last Month | February | |
|---|---|---|
| – | 1 | MacinTax |
| 2 | 2 | Dark Castle |
| 3 | 3 | Superpaint |
| 5 | 4 | Suitcase |
| 4 | 5 | Canvas |
| 1 | 6 | Mac Money 3.0 |
| – | 7 | Mac Coach |
| – | 8 | MacTREE |
| 6 | 9 | Write Now |
| – | 10 | Wordfinder |

Source: Kenfil Distribution, Van Nuys, CA. "Kenfil March

PC Plus Consulting Presents:

# FREEWARE

$2.99 per disk

$2.99 per disk

**Public Domain and User-Supported Software for IBM and Compatibles - DOS 2.1 and Higher.**
**Programs and Utilities to meet all your computing needs.**

## ADULTS ONLY

❒ **ADULTS ONLY/1 (147)** - German-made, great animated graphics. CGA required.
❒ **STRIP POKER (148)** - Watch out for your pants. CGA & Basic required.
❒ **X-RATED PRINTMASTER (149)** - X-Rated graphics for Printmaster Plus.
❒ **X-RATED PRINTSHOP (150)** - X-Rated graphics for Printshop.
❒ **BAD-BAD (289)** - Naughty adventure game. CGA required.
❒ **ASTRO-[bleep] (297)** - Arcade game. CGA req.
❒ **STRIP BLACKJACK (433)** - Also contains x-rated text humor. CGA required.
❒ **NASTY GIRL (435)** - The name says it all.... CGA required.
❒ **X-RATED DIGI-PICS (436)** - Some lovely ladies are automatically scanned. CGA required.

## BUSINESS

❒ **EZ-FORMS Rev. C.24 (66)** - Menu driven forms generator, many skeleton forms.
❒ **EASY PROJECT V1.2 (440)** - Complete project management system. Excellent.
❒ **REAL ESTATE ANALYST (83)** - Menu driven, mortgages, interest, etc.
❒ **PERSONAL FINANCE MGR V3.0 (68)** - Checking & savings accounts, etc.
❒ **SHARE-TAX/1040 V 87.1 (434)** - Does 1987 computation & prints out tax returns.
❒ **BUSINESS LETTERS (303 & 304)** - (2 disk set) 650 types of business letters.
❒ **MR. BILL V3.2 (311 - 312)** - (2 disk set) Time & billing package . Products or services.
❒ **ESTIBID (313 - 317)** - (5 disk set) Estimating program for manufacturers & contractors.
❒ **RENTAL PROPERTY (318)** - Keeps track of rental activity. Archived files.
❒ **SLICWORKS (321)** - Framework clone. Database, spreadsheet, word proc., & comm.
❒ **SALESEYE V 2.3 (443)** - Sales and business contacts program.
❒ **CASELOAD V1.3 (447)** - Lets attorneys have current status reports of individual caseloads.
❒ **FINANCE MANAGER V4.0 (77)** - Accounting package for business or personal finances.
❒ **SOAR V1.92 (449 & 450)** - (2 disk set) Accounts receivable program.

## COMMUNICATIONS

❒ **QMODEM V3.1 (293 & 294)** - (2 disk set) Good full featured modem program.
❒ **PROCOMM V2.42 (53 & 54)** - (2 disk set) Menu driven, still one of the best.
❒ **EQUAL PARTNERS V1.11 (418)** - Transfer data from 5.25 to 3.5 systems via a serial port.

## DATABASE

❒ **FILE EXPRESS V4.01 (33 & 34)** - (2 disk set) Menu driven, easy to use database package.
❒ **WAMPUM V3.1 (37 & 38)** - (2 disk set) Menu driven dBase III clone. Knowledge of Dbase suggested.
❒ **PC-FILE + V1.0 (295 & 296)**- (2 disk set) Full-featured database; help screens, menus, etc.
❒ **DBASE III PROGRAMS (348)**- Genealogy, Disk cataloging & more. DBASE III required.
❒ **DBASE III UTILITIES (349)** - Misc. programs & utilities. DBASE III required.

## EDUCATION

❒ **PIANOMAN (4 & 5)** - (2 disk set) Makes your PC a music synthesizer, contains tunes.
❒ **FASTYPE V2.1 (120)** - Typing tutor from beginner to advanced. CGA required.
❒ **BEGINNING SPANISH (121)** - Vocabulary, phrases, & words. Basic required.
❒ **THE WORLD (127)** - Display maps of the world. CGA required.
❒ **FUNNELS & BUCKETS V 2.0 (130)** - Great learning game for kids. Ages 5 - 10.
❒ **ERYN'S ABC'S (131)** - Teaches alphabet & numbers. Ages 2 - 6. Basic required.
❒ **AMY'S FIRST PRIMER (133)**- Alphabet, Numbers, etc. Ages 4 - 8. CGA & Basic required.
❒ **POLYGLOT V6.01 (139)** - Vocabulary builder. Grades 7 - college. Excellent.
❒ **ANIMAL MATH (181)** - Count objects, add, subtact. Ages 4 & up. CGA required.
❒ **HANGMAN (91)** - Choose your level of play.
❒ **MATHWHIZ (188)** - Teaches various math operations. Ages 5 & up. Basic required.

## EGA PROGRAMS

❒ **EGA RISK (216)** - The game of world domination. Also contains EGA Roids.
❒ **EGA UTILITIES/1 (260)** - EGA palette setting, change fonts & size of letters, etc.
❒ **EGA DEMO PROGRAMS (353 - 358)** - (6 disk set) Misc. self-running demo programs.

## GAMES

❒ **SLEUTH V4.1 (89)** - Murder mystery game similar to the board game "CLUE".
❒ **BLACKJACK (95)** - Advanced blackjack game with tutor, multiple players. Great for Vegas.
❒ **MONOPOLY V6.7 (106)** - Just like the board game, 2 to 4 players. CGA required.
❒ **DUNGEONS & DRAGONS V1.1 (205)** The Classic Game. Can you survive?
❒ **LAS VEGAS (116)** - Craps, Roullete, Poker, & more. CGA req., Basic on some.
❒ **3D CHESS V1.01 (215)** - Excellent chess game. Switch between 2D & 3D.
❒ **SAM SPADE V1.0A (226)** - Great detective game. Also contains Mazegame; creates mazes.
❒ **SOLITAIRE (211)** - 4 games. CGA required.
❒ **SUPER PINBALL (212)** - 5 games. CGA req.
❒ **WORDPLAY (367)** - Wheel of Fortune clone. Has everything but Vanna and Pat. CGA req.
❒ **MAHJONG (407)** - Fascinating Oriental card game. CGA required.

## GRAPHICS

❒ **HIRES RAINBOW V1.0 (64)** - Full featured paint package. CGA required.
❒ **PRESENTATIONS V2.0 (446)** - Make demo programs & presentations.
❒ **LIGHTING PRESS (266)** - Printmaster Plus clone, flyers, greeting cards, graphics, etc.
❒ **CALENDAR CREATOR (350)** - Create & print your own monthly calendar of events.
❒ **PRINTMASTER GRAPHICS (319)** - 3 libs. of graphics for Printmaster Plus. Over 100.
❒ **PRINTSHOP GRAPHICS (320)** - 3 more libraries of graphics for Printshop. Over 100.
❒ **STREETS ON A DISK (437)** - **DEMO** Program. Map of LA county. CGA or EGA req.
❒ **TROPICAL FISH (427)** - An aquarium on your computer screen. CGA required.
❒ **DANCAD 3D V1.33 (424 & 425)** - (2 disk set) Advanced 2D/3D drafting program. CGA, 2 drives and 640K required.
❒ **CAD CURVE DIGITIZER (339 &340)** - (2 disk set) Excellent CAD program. CGA or EGA required. **Hercules mono version (disk #'s 351 & 352).**

## LANGUAGE

❒ **"C" TUTOR (22 & 23)** - (2 disk set) 14 lesson tutorial, learn to program in 'C ' language.
❒ **"C" LANGUAGE V2.1 (299 & 300)** - (2 disk set) Complete programming environment. Source, compiler, samples.
❒ **BASIC TUTOR (325)** - Learn to program.
❒ **TURBO PASCAL TUTOR (20)** - 17 lesson tutorial with samples, etc.

## MISCELLANEOUS

❒ **STRESS & SHRINK (74)** - Stress - stress test. Shrink - personality analysis.
❒ **HORSERACING (343)** - Handicapping for thoroughbreds.
❒ **ASTROLOGY (155)** - Horoscope & Astrology programs. 1 requires Basic.
❒ **RECIPE MANAGER V1.1 (156 & 157)** (2 disk set) Recipe management system.
❒ **LOTTO (159)** - Advanced techniques to win big bucks. $$$.
❒ **FREEWILL V1.0 (171)** - Valid WILLS for Calif.
❒ **FASTBUCKS (191)** - Menu-driven home finance package. Easy to use.
❒ **BIORHYTHM (194)** - Calculate & print your own monthly charts.
❒ **TENANTS RIGHTS (196)** - The 'Bible' for California renters. **A MUST.**
❒ **MEALMATE (332)** - Nutritional database for meal planning.
❒ **LITTLE BLACK BOOK (441)** - Creates pocket sized address book.

## PRINTER UTILITIES

❒ **IMAGEPRINT V1.2 (44)** - Makes 9 pin Epson compatible printers do letter quality print.
❒ **LASERJET FONTS (327)** - Over 30 downloadable fonts for the Laserjet Plus/II.
❒ **LASERJET FONTS/UTILITIES (328)** - More fonts & a utility to capture graphic screen images from other programs. Also contains 'Pamphlet'.

## SPREADSHEET

❒ **LOTUS 123 PROGRAMS (28 - 32)** - (5 disk set) Contains as many applications and utilities that we could find. Requires Lotus 123 .
❒ **LOTUS 123 TUTOR (177)** - Beginning tutorial for Lotus 123. Requires Lotus 123.
❒ **AS EASY AS V3.0 (302)** - LOTUS clone. 52 column sheet, graphing. CGA required.

## UTILITIES

❒ **DISK COMMANDO V2.0 (218 & 219)** - (2 disk set) Norton's Advanced Utilities Clone.
❒ **SIM-CGA (220)** - Great for most programs that need color (CGA) to run.
❒ **DOS HELP (255)** - Help screen for DOS commands & functions. For DOS 3.XX.
❒ **DOS TUTORIAL V4.2 (256)** - Menu driven tutorial that teaches DOS commands. A MUST.
❒ **BEGINNERS (257)** - The basics of using most public domain/shareware software.
❒ **PC MAGAZINE (277)** - Over 30 great utilities, rated by PC magazine.
❒ **LIST V6.2A (274)** Replace DOS 'TYPE' command. Best utility for viewing PD Documentation.
❒ **AUTOMENU V4.01 (280)** - Access programs, batch files, etc. from one easy menu system.
❒ **POWERMENU (419)** - Xtree & Sidekick clone rolled into 1. Hard drive required.

## WORD PROCESSING

❒ **SIDEWRITER (6)** - Just like the commercial program SIDEWAYS. Great for Lotus 123.
❒ **RELIANCE MAILING LIST V2.0 (161)** - Easy to use, menu-driven, labels, mail-merge, etc.
❒ **PC-WRITE V2.71 (9 & 10)** - (2 disk set) Full featured word processor, spelling checker, on-line help screens.
❒ **LETTERHEAD (69)** - Create & print your own letterhead on letters or envelopes. Epson or IBM compatible printer required.
❒ **PC TYPE + (373 - 375)** - (3 disk set) A powerful word processor with full screen editing, etc.

## ORDER FORM

___ ___ ___ ___ ___ ___
___ ___ ___ ___ ___ ___
___ ___ ___ ___ ___ ___

NAME_____
ADDRESS_____
CITY_____ST___ZIP_____
PHONE ( ) _____

**Minimum order 3 disks.**
**1 FREE disk for every 10 ordered**

# of disks____ @ $2.99 = _____
Calif. Sales Tax (6.5%) = _____
Shipping & Handling = 2.00

TOTAL = $=====

Mail order form & check or money order to:

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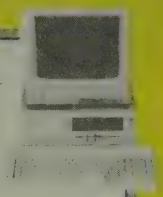
Panorama City, CA 91402
(818) 891-7930

Call or write for free catalog.
**We are open M-Sat, 9 am - 5 pm.**
Available on 3.5" media - $3.99 ea.
**We do not accept VISA, MC or COD's.**

# Step Into A World Of Savings

## LEADING EDGE



2 Drive System . . . . . $850

1 Drive, 20 MEG System . . $1095

1 Drive, 30 MEG System . . $1145

**ALL SYSTEMS INCLUDE MS DOS, GW BASIC & MANUALS**

## COMPAQ®

**Deskpro**

| | |
|---|---|
| 286 20 MEG | $2297 |
| 40 MEG | $2497 |
| 386 40 MEG | $4595 |
| 70 MEG | $5495 |
| 130 MEG. | $6450 |
| Portable 20 MEG | $3650 |
| 40 MEG | $4250 |

**ALL OTHER MODELS—CALL**

## IBM

| | |
|---|---|
| Model 30-002 | $1275 |
| Model 30-021 | $1715 |
| Model 50-021 | $2728 |
| Model 60-041 | $3975 |
| Model 60-071 | $4723 |
| IBM AT 068/339 | CALL |

**WE WILL TRY TO BEAT ANY PRICE!**

## AST Premium 286

**RESEARCH INC.**

w/20 MEG . . . . . $1850
w/40 MEG . . . . . $1995

Systems come complete with DOS and operation manuals.

## NEC MULTISPEED PORTABLE COMPUTER

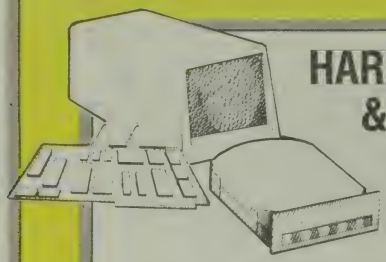
4.77/10MHz switchable (NEC V-30 chip) 640K RAM dual 3.5″ 760K drives S twist LCD, 640Kx200 resolution built-in, pop-up firmware DOS 3.2

NEW EL **$1699**

## TOSHIBA PORTABLE

| | |
|---|---|
| T1000 | $850 |
| T1200 | $2250 |
| T3100-20 | $2999 |
| Zenith Portables | CALL |

Internal 1200b modem for above laptops $299



## HARD DISKS & DRIVES

**CALL FOR LATEST PRICE**

| | |
|---|---|
| 20 MEG HARD CARD | $395 |
| TEAC 360 K DS/DD | $99 |
| Toshiba 360K DS/DD | $99 |
| Fujitsu 360K DS/DD | $89 |
| Seagate 225-20MB H/H w/controller | $259 |
| Seagate 238-30MB H/H w/controller card | $285 |
| Seagate 4026 20 MEG | $475 |
| Seagate 4038 30 MEG | $529 |
| Seagate 4051 40 MEG | $689 |
| Seagate 4096 80 MEG | $750 |
| FUJI Hard disks w/controller (3½″ technology low-power) 20 MEG | $395 |
| 30 MEG | $450 |

**All tape backup units including Irwin, Teac, Archive**

## PRINTERS

| | |
|---|---|
| LX800 | CALL |
| New Epson FX86 | CALL |
| New Epson FX286e | CALL |
| Epson LQ800 | CALL |
| Epson LQ1000 | CALL |
| Epson EX800 | CALL |
| Epson EX 1000 | CALL |
| Okidata 292 enhanced | 545 |
| Okidata 293 enhanced | 695 |
| Okidata 294 | 1095 |
| Toshiba P 321 SL | 535 |
| Toshiba P 341 | 795 |
| Toshiba P 351 | 945 |
| Citizen MSP 10 | 260 |
| Citizen MSP 15 | 339 |
| Citizen MSP 20 | CALL |
| Citizen MSP 40 | 315 |
| Citizen MSP 55 | 471 |
| Citizen 120D | 160 |
| Citizen Premiere 35 | 439 |
| Citizen Tribute 224 | 635 |
| Citizen Overture 110 | 1689 |
| 6′ Parallel Printer Cable | 15 |
| Universal Printer stand | 19 |

## MONITORS

| | |
|---|---|
| Princeton Graphic Monitors | CALL |
| Taxan (All models) | CALL |
| IBM Monochrome | CALL |
| IBM Color | CALL |
| Compaq Dual Mode | 229 |
| NEC Multisync II | 575 |
| Sony KB-1311 CR (combination TV & RGB 640x200 monitor) | 450 |
| Nanao TTL softwhite | 129 |
| Nanao RGB 640x400 w/card | 695 |
| Nanao EGA | 495 |
| Samsung Amber | 79 |
| Samsung RGB | 259 |
| Samsung EGA | 379 |
| Thompson 14″ Amber | 169 |
| Thompson 14″ RGB | 249 |
| Thompson 14″ EGA | 349 |
| Thompson 14″ Ultrascan | 495 |

## MODEMS

| | |
|---|---|
| Hayes 1200B internal | $349 |
| Hayes 1200 external | 389 |
| Hayes Compatible internal 1200 Baud modem w/software | 79 |
| Hayes compatible 1200 Baud external | 99 |
| US Robotics 2400B external | 395 |
| US Robotics 2400B internal | 159 |
| US Robotics 1200B internal | 95 |
| Volksmodem 1200 internal | 99 |
| Volksmodem 1200 external | 129 |

**NEW**
**Hewlett Packard Laser jet II w/toner cartridge**
**$1750**

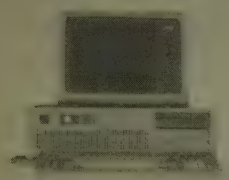
All prices subject to change without notice

# (213) 618-8864

**FAX: (213) 618-8543**

ALL SALES ARE FINAL
NO RETURN WITHOUT AUTHORIZATION NUMBER
ALL UNAUTHORIZED RETURNS SUBJECT TO 25% RESTOCKING CHARGE
3% charge on all C.O. D. orders
3% shipping and handling
(minimum $5 s/h on all shipped orders)

COMPUTER SYSTEMS



## 6/10 MHz AT

- AT Style Case w/Speaker
- Phoenix Bios
- Real Time Clock & Calendar
- Monographics/Parallel Ports
- TTL Monitor w/Tilt & Swivel Base
- Floppy/Hard Disk Controller
- 1-1.2 Meg Floppy
- 101 Enhanced Keyboard
- Math Co-Processor Slot
- FCC & UL Approved
- 1 Year Warranty Parts & Labor

**$995**

FOR COLOR UPGRADE ADD $200
12 MHz and 386 ATs Available

COMPUTER SYSTEMS

## 4.77/8MHz XT

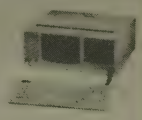
- XT Style Case w/Speaker
- Phoenix Bios
- 8-8 Bit Slots
- Monographic/Parallel Ports
- TTL Monitor w/Tilt & Swivel Base
- Floppy Disk Controller
- 2-360K Floppies
- 5150 AT Style Keyboard
- Math Co-Processor Slot
- FCC & UL Approved
- 1 Year Warranty Parts & Labor

**$595**

FOR COLOR UPGRADE ADD $200
10 and 12 MHz XTs Available

COMPUTER SYSTEMS

## XT OR AT PORTABLE



- 4.77/8MHz Switchable
- Phoenix Bios
- 8-8 Bit Slots
- Monographics/Parallel Port
- TTL Monitor
- Floppy Disk Controller
- 2-360K Floppies
- Keyboard
- Math Co-Processor Slot
- FCC & UL Approved
- 1 Year Warranty Parts & Labor

AT HAS SAME AS ABOVE BUT

- 6/10 MHz Switchable
- 6-16 Bit, 2-8 Bit Slots
- Floppy/Hard Disk Controller
- 1-1.2 Meg, 1-360K Floppies

**$1450**

**Come Visit Our Showroom & Demo These Computers!**

# SOFTWARE & CARDS

**Data Base**
DBase III + ..... $419
Reflex ..... 79.95
RBASE System V ..... CALL

**Wordprocessing Software**
Multimate/Advantage ..... $229/309
MS Word ..... 219
Wordperfect 4.2 ..... 219
Wordstar 2000/2000 + ..... 239/299

**Accounting Software**
Peachtree Back to Basics Accounting .. $219
Open systems GL/AR/AP/PR/INV ..... 419

**Utilities**
Norton Utilities ..... $59.95
Turbo Lightning ..... 59.95
Clipper ..... 419
X-TREE ..... 35

Copy II PC option board ..... 89
COPY II PC ..... 29
VP Planner ..... 59.95
Fastback ..... 109
Microsoft Windows ..... 69

**Borland**
Borland Turbo Lightning ..... $59.95
Turbo Pascal 3.0 w/8087 & B.C.D. support ..... 65
Sidekick (non-protected) ..... 47.95
Super Key ..... 39.95
Traveling sidekick ..... 47.95

**Languages**
NEW MS Macro Assembler 5.0 ..... CALL
MS Fortran Compiler ..... CALL
NEW MS Quick Basic ..... CALL
NEW MS C Compiler 5.0 ..... CALL
MS Cobol Compiler ..... CALL
MS Basic Compiler ..... CALL
MS Pascal Compiler ..... CALL

**Graphics**
Chart Master ..... $229
Diagram Master ..... 199.95
Map Master ..... 239.95
Sign Master ..... 149.95
Certificate Maker ..... 35.97
DP Graphics ..... 99
Generic CAD ..... 89.95
First CADD ..... 49.95

**Communications**
Smart Com II ..... $99
Crosstalk XVI ..... CALL

**Integrated**
Enable ..... $359
Framework II ..... 419
Lotus 123/Symphony ..... 315/Call

**Cards**
AST 6 Pak + w/64K ..... $125
AST 6-Pak Premium w/512K ..... Call
AST Advantage w/128K ..... 195

D.F.I. aboveboard AT ..... 199
Hercules Color/Graphics ..... 155
Hercules Mono/Graphics ..... 195
Paradise EGA auto switch ..... 369
Sigma 400 L or H ..... 419
ATI Wondercard ..... CALL
Intel 8087/80287 ..... CALL
Intel Above Board PC w/64K ..... 259
Intel Above Board AT w/128K ..... 369
Video 7 Vega Deluxe ..... 259

**Compatible Cards**
Monographics with parallel port ..... $45
Colorgraphics with parallel port ..... 45
Floppy controller with cable ..... 29
Multi I/O with floppy controller ..... 59
Multifunction card (6) w/384K ..... 125
Serial port with clock/calendar ..... 35
Parallel port only ..... 29
EGA (no parallel port) ..... 135

# THIS MONTH'S SPECIALS

**THOMPSON MONITORS**
14" Amber Monitor ..... $169
14" RGB Monitor ..... 249
14" EGA Monitor ..... 349
14" Ultrascan Monitor ..... 495

All monitors Include tilt and swivel base.

**SEAGATE HARD DRIVES**
ST 225-20MB H/H w/controller ..... $259
ST 238-30MB H/H w/controller card ..... 285

Software World

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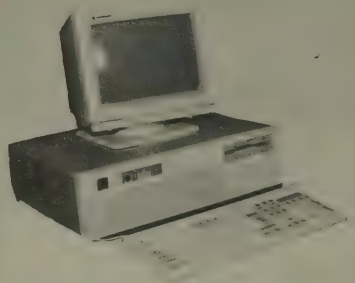
FAX: (213) 618-8543

20655 S. Western #104
Torrance, CA 90501

# ATLANTIC COMPUTER SYSTEMS

HIGH PERFORMANCE computers at AFFORDABLE PRICES!

## Complete 80386 System



- 16/8/6/4.77 MHz 0-wait 80386-16 mother board (designed/manufactured in U.S.)
- 1 Mb high-speed static-column RAM installed
- Expandable to 10 Mb
- Phoenix 386 BIOS
- Relocatable BIOS & EGA BIOS for improved performance
- 1.2 Mb floppy disk drive
- Western Digital WA-2 hard/floppy controller
- 250 Watt, U.L. - listed power supply
- Hercules-comp. monographics card with printer port
- Thomson 15", dual-freq (CGA/MGA) amber monitor
- AT deluxe case (space for 5 half -ht. drives, RESET/TURBO buttons, RESET/HDD/TURBO LEDS)
- KEY TRONICS enhanced-101 mechanical-tactile keyboard

NEW!

**$2,099.00**

OPTIONS:

- 20 MHz system upgrade ..... add $200.00
- Color upgrade (640 x 200) ..... add $185.00
- EGA upgrade (640 x 350) ..... add $395.00
- Multisync upgrade (800 x 560) ..... add $625.00
- 360 Kb floppy disk drive ..... add $ 75.00
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- Printer Port
- Hi-Res. Monochrome Monitor
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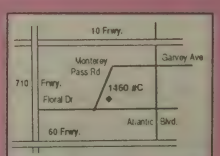


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has recently seen a large turnover in staff on the A/UX product, and Apple said that much more of the development of A/UX would be done at Apple in the future. Apple is also relying on third-party developers to market the same additional applications and utilities that are available for other versions of UNIX. R Systems, a large UNIX vendor, announced the availability of its line of office software on A/UX.

Many Macintosh hardware vendors announced the compatibility of their hardware with A/UX. Jasmine announced a line of A/UX-compatible hard disks, SuperMac announced a new communications controller board that allows A/UX to communicate with LocalTalk (previously AppleTalk) networks, Irwin announced a family of A/UX tape drives, and National Semiconductor announced that its NS 8/16 Memory Expansion Board works with A/UX.

Although the news of A/UX and its capabilities were widely discussed at UniForum, so were its limitations. The biggest letdown for many people at the show was the number of Macintosh programs that do not work under A/UX. None of the programs from the two largest Macintosh software manufacturers, Microsoft and Claris, works with A/UX. This means that A/UX users cannot directly access the two most popular word processors, Microsoft *Word* or *MacWrite*. Neither Microsoft or Claris would say when they expected their programs to work under A/UX. However, this does not prevent A/UX users from using the programs: they can start their Mac IIs running the Macintosh operating system, run their Macintosh programs, then launch A/UX. To switch from A/UX to the Macintosh operating system, they must shut down the computer, although Apple will make the transition between the two operating systems easier in future releases.

Apple is adding its first for-cost customer service with A/UX. For $3,395, you can get one year of technical support for A/UX with a toll-free hotline and problem-tracking service. Many competitors at UniForum made fun of the high cost of this service, claiming that they offered the same service for free or for a few hundred dollars per year. Apple staff said that they expect to upgrade A/UX on a regular basis and that the upgrade costs would be fairly low. In addition, they said that the procedure for upgrading versions of the operating system would be much easier than with most UNIX systems.

Other features that did not make it into the first release of A/UX also disappointed many UNIX users. Obvious parts of the Mac interface such as sound and color are not available. You cannot run more than one program at a time, as you can under most UNIX systems. LocalTalk, Apple's main-line networking system, is also unavailable. It is likely that Apple will add these features in future releases of A/UX, although they did not say when any specific features would be added. Also, A/UX will not run on Mac SEs with accelerator boards, even if the boards have the required memory-management chips. If Apple can make A/UX work on those systems, they will open up a market that is expected to be over 100,000 Macintosh systems by the end of the year.

Apple offered four ways to buy A/UX. A monochrome system costs $8597, while a color system costs $9346. If you already own a Mac II, you can upgrade to A/UX for around $4900; this includes the 80 megabyte hard drive that comes with A/UX on it. A development system with extra RAM will cost over $10,000. Apple will also sell site licenses for A/UX in sets, so that a company can develop A/UX software and sell their software bundled with A/UX.

Apple did not make an official announcement of how many copies of A/UX they expect to sell, although many people in the Apple booth at UniForum said that they think that they will sell 40,000 copies this year. If they reach that figure, A/UX will become one of the best-selling versions of UNIX in an extremely short time. This will certainly have a significant effect on the manufacturers of other UNIX systems that are based on the 68000-family chips, whose sales are much lower than that. People considering which UNIX system to buy will likely be swayed to the Mac II due to its ability to run Macintosh software as well as UNIX software.

## UniForum Brings Out The UNIX Masses For New Products

Just as many PC software and hardware manufacturers wait to make their product announcements at COMDEX or the West Coast Computer Faire, many UNIX vendors waited until last month's UniForum to announce new products. Although Apple's announcement of A/UX dominated the show (including Apple's president John Sculley giving the keynote address that opened the show), many other major UNIX vendors jostled for the attention of the press and attendees with their announcements.

AT&T gave a hint about what UNIX System V Release 4 would look like. The company said that they will incorporate features of Microsoft's XENIX, Sun's SunOS, and Berkeley 4.2 and 4.3 UNIX into the new release of UNIX. They will also add new features such as a real-time kernel (which allows machines that need to act on quick


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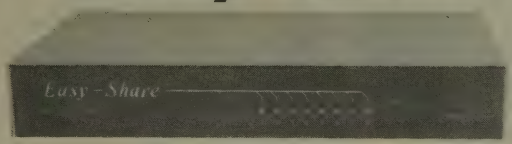


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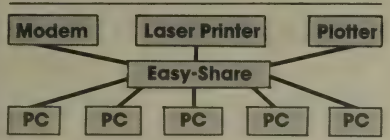


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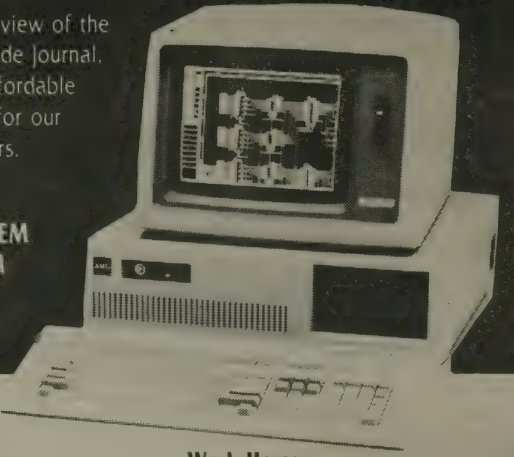

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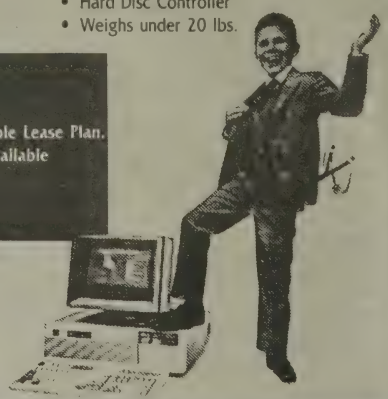

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timing to be controlled by UNIX), better networking, better support for international users, and general improvements to the user interface. The new release will also conform to POSIX and X/OPEN, standards that allow software manufacturers greater freedom from writing for individual versions of UNIX. The new release should be available by the end of 1989.

AT&T is trying to keep UNIX hardware manufacturers happy after a large number of vendors complained that AT&T is favoring Sun in future developments of UNIX. AT&T made great pains to indicate that System V Release 4 will be ported to the Intel 80386 before it is ported to Sun's SPARC architecture. Jack Scanlon, AT&T's vice president for UNIX development, said that no UNIX manufacturer was going to get preferential treatment, but many remained skeptical.

Among others making product announcements:

• Microsoft and Hewlett-Packard are developing a version of Microsoft's OS/2 LAN Manager for UNIX. The software will allow UNIX systems to act as file servers for computers running Microsoft Networks and OS/2 LAN Manager software. Microsoft hopes that this will strengthen the position of its OS/2 LAN Manager in the OS/2 world, and give MS-DOS and OS/2 users on networks with UNIX users easier access to files on UNIX systems. The program, called LM/X, will be available in early 1989.

• Locus Computing showed *Xsight*, a program which gives X-Windows capabilities to computers running UNIX System V on Intel 80386 CPUs. Using *Xsight* with Locus' Merge 386 program allows those computers to use the X-Windows standard graphics on the same screen with MS-DOS programs. Locus also showed *PC-Xsight*, the first program that allows PCs running MS-DOS to act as inexpensive graphics work stations when networked with systems running *Xsight*.

• TOPS showed TOPS/VMS, which allows Mac and PC users running TOPS to access files on a DEC VAX running DEC's VMS operating system. TOPS/VMS was also shown at DEXPO East, where it generated a great deal of interest in the DEC market since it uses Apple's LocalTalk protocols. Apple and DEC have previously announced an agreement to work together developing tighter connections around LocalTalk, and TOPS/VAX is one of the first products available that exploits that connection.

• Intergraph announced that they will make the CLIPPER reduced instruction set chip (RISC) set available to other manufacturers as a four-chip set. CLIPPER runs UNIX at very high speeds, and allows manufacturers who want to stray from the Intel and Motorola standards to build relatively inexpensive high-end computers. The chip set allows manufacturers more flexibility than the previous board that Intergraph sold.

• IBM said that AIX, its version of UNIX, will conform to its SAA standard on almost all levels. This reassured many IBM users that IBM was indeed considering UNIX a real part of its world, not simply a satellite. IBM also announced improvements to AIX on the PC/RT and PS/2 Model 80. IBM also announced an agreement with the National Bureau of Standards to develop tests that will check conformity with the UNIX standards of the IEEE. Many UNIX industry leaders think that these tests will compete with AT&T's SVVS.

• Motorola introduced the UNIX Binary Compatibility Standards (BCS) for computers using Motorola CPUs. They were joined by more than 30 hardware and software vendors in their move to make BCS a standard for sharing applications and functions between applications.

• Apollo Computer showed its new Domain/OS operating system, a distributed version of UNIX. Domain/OS allows users to share files and devices with other computers on a network, and even al-

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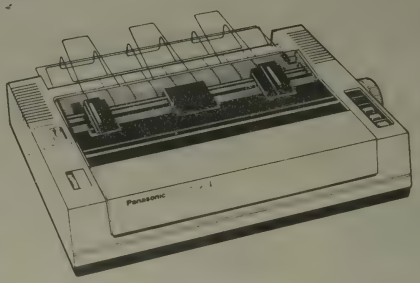

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lows them to share tasks among computers. For example, a large problem being calculated on one computer could be split to many computers, each of which would work on a small part and send information back to the original computer. Domain/OS also supports all European languages directly, giving Apollo a large advantage in the growing European UNIX market.

• Informix Software and Innovative Software, two of the giants in the UNIX software industry, completed their merger. The new company, which retains the Informix name, becomes the tenth largest public software company in the country. The software lines of each side of the company (data base management for Informix and office automation for Innovative) will continue with only minor changes.

## Ashton-Tate Buys Ann Arbor Softworks, Will Sell New Spreadsheet On The Mac

Ashton-Tate joined the vapor-products industry last month by announcing its acquisition of Ann Arbor Softworks, the maker of *FullWrite* Professional for the Macintosh. *FullWrite* has been delayed for over a year since its announcement, and will probably not ship until May. The company also announced that it will sell a new product, *Full Impact*, which will attempt to challenge *Excel* in the spreadsheet market for the Macintosh. *Full Impact* will allow users to combine text and graphics in their spreadsheet. The product is not expected to ship until August. Ashton-Tate, 213/329-8000.

## dBASE IV To Include SQL And Compiler

Ashton-Tate also announced *dBASE IV*, which is not expected to be shipped until after July. *dBASE IV* will support the SQL standard, although data cannot be moved from a *dBASE* database to an SQL database. This means that the SQL portion of *dBASE IV* will only be useful for data base developers intending to use SQL from another vendor later. Programmers wanting a real SQL environment must use the *SQL Server* announced by Microsoft and Ashton-Tate earlier this year.

The new program will also include a compiler, which means that programmers can develop programs for people who do not own *dBASE IV*. The compiler reads normal *dBASE IV* commands and turns them into an executable program like other applications. Many vendors already offer *dBASE*-compatible compilers, and the market for them has been well-established.

Ashton-Tate says that all programs and data bases developed for *dBASE III* will work with *dBASE IV*. In addition, *dBASE IV* will have a second interface which is much easier to learn and use, according to Ashton-Tate. The new user interface will include extensive menus and screen prompts, much like many of *dBASE III*'s competitors. In a bow to *Paradox*, one of *dBASE III*'s biggest competitors, *dBASE IV* will also allow the user to teach it queries by example. This means that if you use a query that does not follow the rules exactly, but the program can determine what you want, future queries can use the same structure. Other new features include calculated fields, data validation, and line drawing.

One feature that will certainly be appreciated by end users will be the ability to combine many databases into a single view. This allows a greater flexibility and makes each screen design much more useful. Since many of Ashton-Tate's competitors make using relational data much easier than in *dBASE III*, this will quell some of the criticism of the program's ease-of use. *dBASE IV* will

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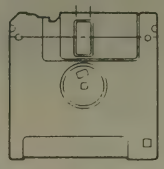

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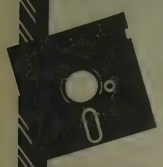

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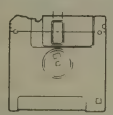

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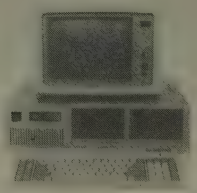

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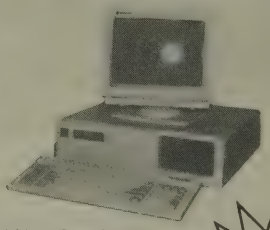

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also allow you to automatically index your data bases.

Programmers will also appreciate the ability to create windows with pull-down menus. In its announcement, Ashton-Tate said that it relies heavily on programmers to create data base systems for non-programmers, and that *dBASE IV* will have many new features for creating such programs. In addition to windows, programmers will be able to customize pre-formed template programs and can add encryption and file locking.

Ashton-Tate will make *dBASE IV* available for both MS-DOS and OS/2. The standard edition will cost $795, while the data base developer's edition will cost $1,295. Upgrades will be available for current users for $175; people who buy *dBASE III* until July 31 will be able to upgrade for $30.

## Microsoft Announces New Languages For OS/2

People writing programs for OS/2 got a shot in the arm from Microsoft with its announcement of versions of all its major languages for OS/2. With these languages, developers can write programs that work under OS/2 or MS-DOS; in some of the languages, they can write programs that run under both operating systems. The languages, which will be available in the next two months, will greatly increase the number of programs available for OS/2, according to Microsoft. Microsoft also added features to the languages, such as a new programmer's editor (creatively named Microsoft Editor) and improved versions of CodeView. Microsoft stressed that each language could create programs for both operating systems, letting the programmer decide which environment he or she wanted the programs to run in. The new versions of the languages are C 5.1, BASIC Compiler 6.0, Macro Assembler 5.1, FORTRAN 4.1, and Pascal 4.0; upgrades will be available for owners of current versions of the languages.

Microsoft Editor is intended as a complete development environment. The editor allows you to compile and link parts of your program without leaving the editor. Error messages are sent back to the editor, which flags the lines of the program which contains the errors. Programmers' environments such as this have been available from other vendors for many years, but this is the first time that one has been available from Microsoft. The fact that the Microsoft Editor is free will increase the competition among the sellers of other editors. Microsoft Editor will run under MS-DOS and OS/2. The OS/2 version will use OS/2's multi-tasking to allow steps of the programming process to proceed at the same time.

Microsoft also announced the OS/2 Programmer's Toolkit which helps programmers learn more about programming for OS/2.

In a separate announcement, Microsoft said that it plans to release a version of Microsoft *Word* for OS/2 later this year, coinciding with a new version of *Word* for MS-DOS. It will bundle the MS-DOS and OS/2 versions of the product in the same package for one price, and the two programs will have the same user interface. Microsoft will also release an OS/2 version of its *Multiplan* spreadsheet in May. Microsoft, 206/882-8080.

## Sun Introduces New SPARC Workstation

Calling it the first supercomputing desktop workstation, Sun announced its newest computer based on its SPARC architecture last month. The Sun-4/110 is a smaller version of Sun's 4/260 computer introduced last year. The 4/110 is about 75% as fast as the 4/260, but costs half as much (around $19,000). The computer is intended for people with compute-intensive tasks such as numerical

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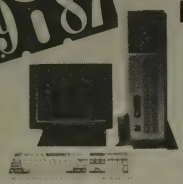

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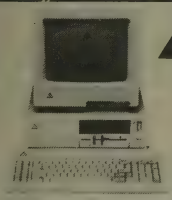

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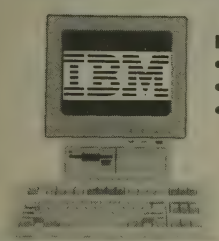


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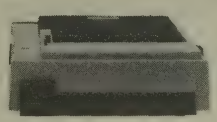

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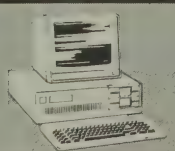

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analysis and artificial intelligence. It runs Sun's version of UNIX and comes with eight megabytes of memory (expandable up to 32 megabytes) and an Ethernet port in the computer. Sun Microsystems, 800/821-4642.

## California Information Bill Of Rights Passes Committee

Assembly Constitutional Amendment 36, better known as the Information Bill of Rights, was passed by the Assembly's Elections, Reapportionment, and Constitutional Amendments committee on a 6-0 vote. The full Assembly will vote on the bill soon, according to Gwen Moore (D-Los Angeles) who wrote the bill and has shepherded it through its long journey. The bill will add electronic communications to the freedom of speech and privacy protections in the California constitution. Moore hopes that the bill will increase the viability of California's information industry since it gives electronic information providers the same rights as other media such as newspapers and television. Dozens of people from around the state joined in the grass-roots campaign before the committee to have the bill passed.

## Tandem To Buy Ungermann-Bass for $260 Million

Tandem Computers, known for its strength in the mid-range computer market, will buy Ungermann-Bass, one of the leaders in computer networks for all sizes of computers. Tandem said that the differences in the companies makes the purchase of Ungermann-Bass all the more interesting. Although Tandem is huge relative to Ungermann-Bass ($1 billion in sales vs. $150 million), it has been historically weak in its efforts to link with computers from other manufacturers. The two Silicon Valley companies will continue to push their products individually, although Ungermann-Bass will become a subsidiary of Tandem when the stockholders approve of the pact in the next few months.

## Computer Automation Flexes Muscles With MCA Patents

In one of the opening shots in the long-expected legal battles over the PS/2, Computer Automation of Irvine has been demanding royalties and licensing fees from companies creating PS/2 clones and even manufacturers of boards that work with the PS/2. Computer Automation claims a patent on some of the technology that IBM used when it created the Micro Channel Architecture, and IBM has paid a fee and royalties for the patent. Now, some hardware manufacturers are balking at Computer Automation's demands for money, claiming either that the patent is invalid or that their devices do not infringe on the patent. The largest company to challenge Computer Automation is Quadram, which claims that the techniques it uses in its PS/2 memory boards do not fall under the patent.

## Ed Esber Joins Board Of Directors At Activision

It's a long way from business products to games, but Ed Esber, chairman and CEO of Ashton-Tate, wants to be in both worlds. Activision announced that Esber has been elected to their board of directors. Activision is known primarily for its wide variety of computer games (Activision calls these "interactive electronic media"), and is one of the largest software manufacturers in the country. Although Esber has never worked in computer games before, he is widely acknowledged as an energetic leader and should help Activision in the future.

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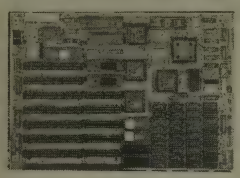

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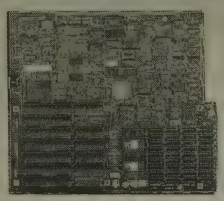

### STANDARD 286 MAINBOARD

- 80286-10 CPU
- Phoenix Bios

10 MHz Zero Wait State ..... $355

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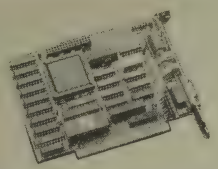

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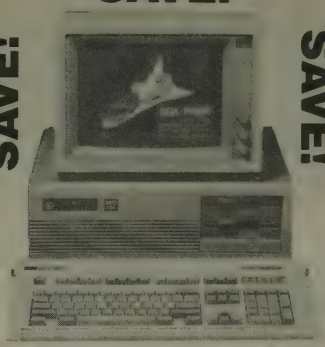

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APPLE II

## SoftSwitch

**By:** *Ken Kashmarek*
**Designed by:** *Roger Wagner*
**Published by:** *Roger Wagner Publishing (1987)*
**For:** *Apple IIGS (768K)*
**List Price:** *$59.95*
**Reviewed by:** *Mike Markowitz*

*SoftSwitch* is a strange and wonderful program that, in effect, puts three virtual Apple IIe computers inside your Apple IIGS.

*SoftSwitch* installs itself as a Classic Desk Accessory, which means it is accessed by pressing <control> <open-apple> <escape>. Any ProDOS 8 or DOS 3.3 program that permits itself to be interrupted can be stashed in its own "workspace" by *SoftSwitch*. It remains there, in suspended animation, while you go off and do something else with another program. While this is not exactly a true multi-tasking environment, it has a lot of practical applications. You can easily switch between programs, which is often quicker than booting each one separately. You can also capture certain kinds of graphics, and "paste" them into programs that normally could not access them.

The *SoftSwitch* display consists of several windows that show miniature screen images. There is a window for each of the three stored workspaces, and another for the current suspended program. The date and time of suspension is shown for each window, along with your current memory status.

Although the concept behind *SoftSwitch* may be a little hard to grasp, using the program is very simple. The main commands are simply the digits 1, 2 and 3. According to context, the program will interpret these keystrokes as instructions to load or switch a workspace. Open-Apple followed by a number will clear a workspace.

*SoftSwitch* includes another application called Keepsake, which can be used to freeze the current state of a program and save it to disk. This is handy for adventure games that do not provide their own game save feature.

Programming wizard Roger Wagner was able to make *SoftSwitch* work with as little as 512K of expanded memory (beyond the 256K the IIGS is born with). He was not able, however, to make it work with most ProDOS 16 applications, because they violate "good programming practices" in various ways, such as turning off access to the desk accessory menu. Also, there isn't enough memory on most GS RAM expansion cards to accommodate two ProDOS 16 programs plus *SoftSwitch*.

Documentation includes a comprehensive 78-page spiral-bound manual and an eight-page Quick Start guide. The manual is packed with specific tips on using *SoftSwitch* with various graphics programs. Registered owners receive a free backup disk. *SoftSwitch* uses a unique copy protection scheme that involves setting a bit in the IIGS's battery-backed RAM. Only the installation disk is copy-protected; you can install the program on any system disk you own. You can use one copy of the program on no more than two different computers.

*SoftSwitch* should be particularly useful to people who program, develop, test, demonstrate or write documentation for Apple II software. For average users, it offers the tantalizing possibility of making almost any program a "Desk Accessory" to any other program. (Roger Wagner Publishing, Inc., 10761 Woodside Avenue, Suite E, Santee, CA 92071 (619) 562-3670.)

## Timeout Desktools

**By:** *Howard Bangerter, Alan Bird, Glenn Clawson, Mark deJong and Dan Verkade*
**Published by:** *Beagle Brothers (1987)*
**For:** *Apple II series*
**List Price:** *$49.95*
**Reviewed by:** *Mike Markowitz*

The marketplace for *AppleWorks* enhancements is a battlefield, where features and convenience are the major weapons. For several years now, the competing vendors have been playing a game of "Can you top this?"

*Timeout Desktools* will be a tough act to follow.

The package includes a calculator, calendar, case-converter, clock, phone dialer, envelope addresser, file encrypter, notepad, page preview, puzzle, word counter and other utilities. There is also a Data Converter that fixes one of the frustrating limitation of the *AppleWorks* Clipboard — it lets you transfer data between spreadsheet and database files. Any of these accessories can be summoned from a menu that pops up when you press <open-apple> <escape>. In the Beagle Brother's tradition, this program also provides several useful little extras, such as a patch to *AppleWorks* that makes <Control> <Reset> return you to the Main Menu, rather than the machine-language monitor.

*Desktools* is provided on both 3.5" and 5.25" media. A 94-page manual closely follows the format and conventions of Apple's own documentation. Like the other programs in the *Timeout* series, *Desktools* is compatible with most other *AppleWorks* enhancements, including *Super MacroWorks*, *AutoWorks*, Applied Engineering's desktop expander, Checkmate's desktop expander and the Pinpoint series.

Installation is foolproof and virtually automatic. The accessories take up surprisingly little disk space, and will fit on the *AppleWorks* STARTUP disk (unless you have put a lot of other stuff on it . . .).

The *Desktools* calculator is more suitable for accounting or bookkeeping than engineering or science. It has the four basic math functions, square root, one memory register, a "tape" printout option, and the ability to return a value to any *AppleWorks* application.

The Calendar shows you any date from 1920 to 1999, and displays two months at a time, along with an Appointment schedule and list of prioritized tasks.

Page Preview gives you a rough picture of how your document will look when printed. About three pages are displayed, side by side, with each letter represented by a black dot on a white background. This looks best on a monochrome monitor.

The Puzzle is the classic scrambled-tile sliding puzzle that can still be found in toy stores.

The Utilities let you set various defaults, load an application into memory, dump an application from memory, rename an application or sort the menu. Loading an application to memory means it does not have to be called from the disk when you wish to access it, but this takes up space on your desktop. If you have a large RAM card, you will probably want to have frequently-used accessories loaded into memory automatically during Startup.

*Desktools* is a superb example of the programmer's art. Any AppleWorker who does not already enjoy the convenience and productivity of a good set of desk accessories should consider buying it. One or two of these little gems may be worth the entire price of admission. (Beagle Brothers, 6215 Ferris Square, Suite 100, San Diego, CA 92121 (619) 296-6400.)

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*"I chose the term 'hypertext' very carefully back around 1963 or '64, published it in '65. I was sure that it would catch on like wildfire, and I was right. The only trouble was it caught on like wildfire twenty years later."*

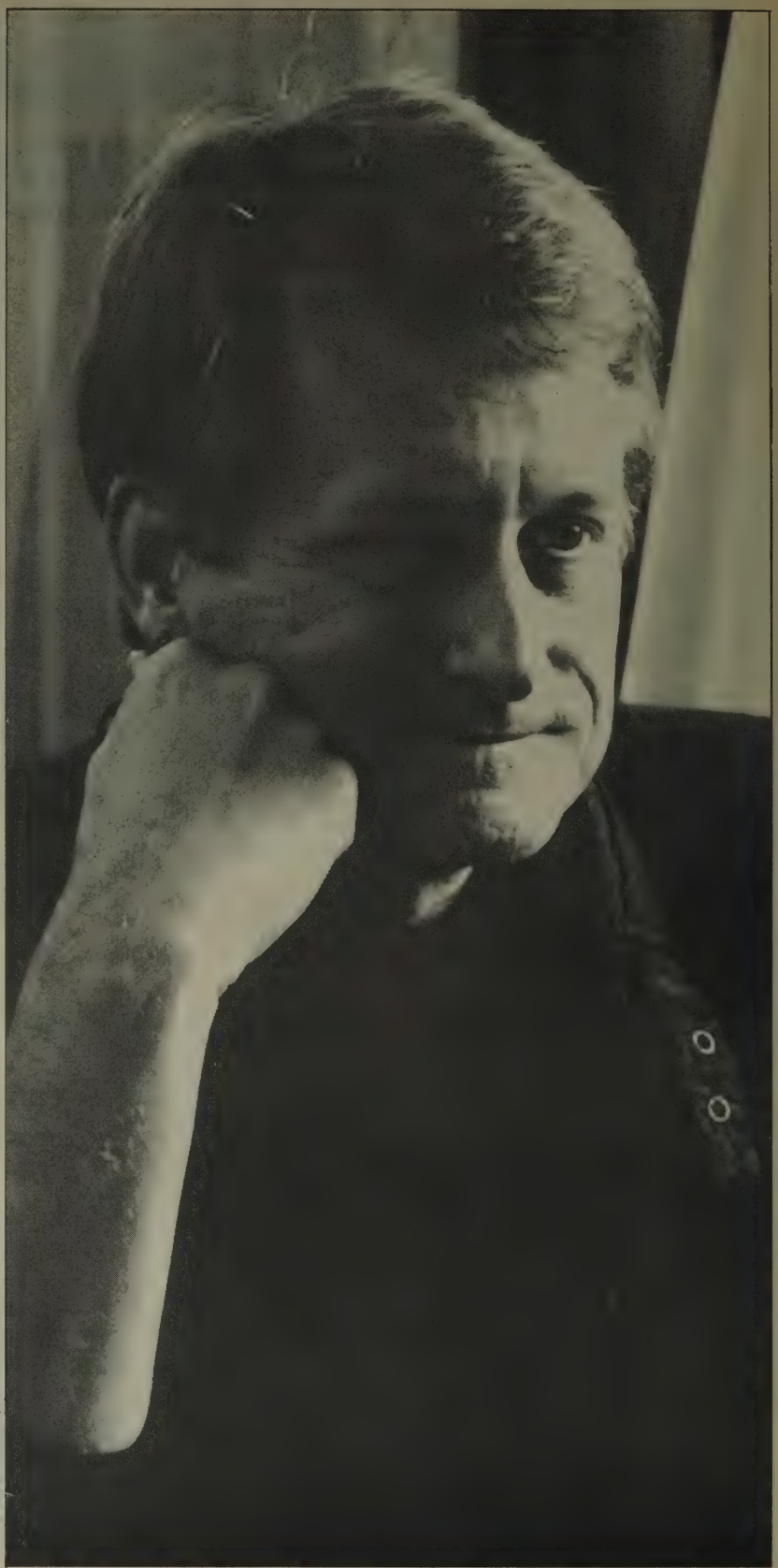

PHOTO © 1988 BY MICHAEL JAY

# Ted Nelson And The Ultimate Information Machine

**By David Gans**

Ted Nelson's is a powerful vision, one that carries the hacker ethic to a glorious fruition even as it flies in the face of all much is holy in our capitalist paradigm.

"The way information has been marketed down the years is the sort of lord-and-peon model," Nelson says. "The information lords create something which is then dusted out to the information peons, who can take it or leave it.

"We are now ready for another world in which we are *all* information providers, and we can modify and suggest modifications to everything. The point is to create a pluralistic world in which all of this is available to everyone, not to create another big marketing world where things can be launched at great launches and promoted with great promotions, and all that gets out is that which the big corporations decide."

It takes a nervy man to promulgate such stuff, and Ted Nelson has made a career of being nervy. "I have a very strong point of view. I'm a 1950s liberal and a 1940s Disney person. A movie person. It's not that I'm on the ivory forefront — I'm very much in the past also. I'm probably one of the few people who remembers Pearl Harbor who went to Woodstock," he laughs. "I span the generations."

A revised and updated edition of Nelson's 1974 book, *Computer Lib*, has just been published by Microsoft Press under the Tempus imprint. Despite its quaint title — which was probably exactly the right name for it in the years when "the computer" was an ominous, opaque and often fearsomely inflexible presence in our lives (check out *Desk Set*, the 1957 Tracy-&-Hepburn movie, among many '50s- and '60s-vintage examples) — the book is *still* (or again, as the computer now sits pleasantly on the desk, whistling a tune and offering to brew up some coffee) a timely and valuable collection of opinions, explanations and suggestions to demystify computers.

Nelson is one of those multifarious souls who understands a variety of disciplines well enough to be an effective cross-pollinator of ideas as well as a menace to stodgy establishment types just about anywhere he decides to work. *Computer Lib* pokes at stuffed shirts and purveyors of "cybercrud" in a festive procession of rants, raves and appeals to reason, profusely illustrated and quite clearly meant for nonsequential reading.

*Computer Lib* is an obvious candidate for hypertext treatment. Throughout the book, pieces of text point to other sections (which point to other sections) and to *Dream Machines*, another mid-'70s Nelson extravaganza which is bound back-to-back with *Computer Lib* to make a two-headed document; pertinent quotes, charts and freehand drawings are splashed all around. If it were a *HyperCard* document instead of a paper-and-ink object, *Computer Lib* would be an explosion of pop-up fields, provocative "click me" icons and bursts of sound. There are gems in 24-point type all over the place, even sideways on the page. "The good news: ANYTHING IS POSSIBLE on your computer. The bad news: NOTHING IS EASY."

As the "personal" computer (which Nelson insists is absolutely no different from a "business" computer — any more than there's a difference between a business and a personal car) gets better and better at retrieving larger amounts of information faster and faster — as computers get more *hyper*, if you will — some of Nelson's visions are beginning to appear in concrete form. He himself has been working for years on the Xanadu system, a universal publication engine which he hopes will bring about electronic democracy, at least in the literary realm. And Apple Computer is touting *HyperCard*, an extraordinarily flexible presentation and storage medium for the Macintosh which puts impressive tools, text, graphics and even sound into the hands of "civilians" without the necessity for complex programming languages and compilers.

**Nelson:** I've always been a generalist. I got into computers because I had trouble writing my books on philosophy. This was a hard problem.

I had a complete philosophical system at the age of 23. When I say complete, I mean it was *comprehensive* in the sense of being well-articulated and tied together. It was still lacking, but I knew I was on to something, and I had terrible trouble organizing it. But I knew that organizing ideas was a hard problem. Many people confronted with big manuscript situations say, "It must be me," or "The material isn't there." Neither of these was the case — I knew I had the material, and I knew I was smart, and I had written lots of things. So the problem was a hard problem, and that's what got me into computers. I took a computer course and said Wow! This is the way to organize reading and writing in the future! Of course!

And then, in successive *waves* it came on me — this was October/November of 1960 — that the computer screen would be where human beings would live, and not only would we organize writings on them, but we would organize writings *for* them, so that there'd be no need for paper. *(laughs)* It was a little premature, but I thought paper publishing would be ended by about 1963....I thought it was manifest destiny. But I wanted to be in on it.

**What does all this hyperstuff mean?**

I take the use of the term from mathematics, where "hyper" means "extended and generalized." "Hyperspace" means space with more than three dimensions; Hyperchess is the game of chess played on a chessboard with more than two dimensions — and so it's a perfectly standard term in mathematics and always has been. In the social sciences, psychology and medicine, especially, "hyper" has been an adjective meaning "agitated and pathological." So there is this awkward tension of terminology.

I chose the term very carefully back around 1963 or '64, published it in '65. I was sure that it would catch on like wildfire, and I was right. The only trouble was it caught on like wildfire twenty years later. About 1985, for no reason that I could discern, suddenly hypertext became the word of the hour. And now you have hypertext systems on battleships, I just found out, you have hypertext systems in the space program...

**What constitutes a hypertext system?**

My definition is that hypertext is non-sequential writing with free user movement. It has nothing to do with computers logically — it has to do with computers pragmatically, just the way large numbers and large bookkeeping schemes have nothing to do with computers logically, but pragmatically.

My background is really as a writer and as a filmmaker, and a generalist and a designer. This all led me to imagine, before I knew anything about computers, new ways of publishing things. When I was in college I published kite-shaped magazines, magazines that folded out every different-which-way. The printers never understood what I was doing...Gosh, I had one that rotated as you turned the pages. I had the printer check it over

*Copyright © 1988 by David Gans. All rights reserved. David Gans, a "recovering" music journalist, uses HyperCard to produce a nationally syndicated radio program, the Deadhead Hour.*

to make sure it was right, that it would work, and he nodded. And then we printed it and put it together and he was astounded, because he hadn't known what I was talking about.

Then there was a magazine called *Flair* back in the early '50s — maybe it was the late '40s — which had all kinds of cutouts and foldouts. Of course it was preposterously expensive and it only lasted about six months. I think it was really the plaything of some very rich woman. But it was wonderful, and it filled me with inspiration for how writing ought to be, of windows and trapdoors and things you open. I'd always imagined writing something like this, writing where you could have paragraphs that opened up like doors and with more behind them.

Writing is the arrangement of words and ideas for the reader. I take writing, by the way, to be a form of design. Many writers would not accept that.

So this was where I was coming from in my thinking, and then I saw the computer. I took a computer course and saw that they had computer screens, and it was instantly clear to me that now you could do all these things — with trapdoors on the screen and things that folded in multiple dimensions — and have it be completely interactive. And this meant that no longer would you have to write to a given length, because the piece could be as long as the reader wanted to go on. There were no space limitations, and you could have side trails that go on forever, for those readers who wanted them. And suddenly here it all was.

And so I started telling people about this in 1965. All I claim is to have seen the obvious....It wasn't obvious to anybody else, but everyone agrees that it's obvious now....I guess obviousness is not timeless, because it must proceed from a certain platform of understanding, and I guess I was just on that platform a little sooner. I was always an extremely isolated person and never thought very much of most people's minds. And consequently — I was just used to the fact that most people didn't understand things. I never thought of people as not understanding what I was saying — I thought that people didn't understand the world, they didn't understand the possibilities. And I still feel this way.

**Hypertext seems fairly obvious today —**

Right! Well, it is!

**But why was it so hard to pitch it to these people? You can make any block of data point to any other block of data, or bunches of data, and you can infinitely expand it, because you can make anything point you at the next thing, and you can color those things and so you can read things in different ways. And it's all so obvious to me, it seems so ripe with potential —**

Well, I still don't [know why it was hard]. But I do know more about the paradigm problem, that is, people who think one way have a hard time with people who think another way. For instance, they just can't understand how you could possibly say what you're saying. Religious arguments are like that. How can you possibly believe what you're saying? And the other thing is, there's the levels of professional jealousy and professional stodginess, and all these things are aspects of the social setting.

**How much does HyperCard have to do with what you have in mind?**

Quite a lot. On the other hand, it does many other things, and it also has certain limitations. You only have a screen-filling cards — scrolling is possible, but it's not really the model — so it encourages the breaking up of materials into screen-sized chunks. On the other hand, it extends marvelously across the entire Apple world, so it's a little different. It's about fifty percent different from what I think of as hypertext, but it allows all kinds of hypertext.

**But it's very nonspecific. The best thing about HyperCard is that it doesn't direct you into any particular structure.**

One of the nice things about it is that they've got an entry level and progressive usability. It is manifest destiny that the writings and graphics of mankind are going to go off into a universally accessible repository network. Hypertext is essentially the most generalist form of writing, that's all I mean by it. And it's manifest destiny that we're going to have a repository system of publication that will be worldwide for hypertext, and the only question is whether it's going to be good or bad. The design details matter enormously, and how it's controlled matters enormously. It's political issues. Orwell had it nailed; he understood far better than we know.

So basically, that's what the Xanadu system is about. But we have to think of the publishing medium of tomorrow as being a network of hundreds of millions of simultaneous users, and adding hundreds of millions of documents an hour to the system. It cannot be under centralized control.

**Well, if that's just there — think of that as just a gigantic cube of data — then it would seem to me that the published product would be — you buy my set of pointers. I'd sell you my pointers, which is my particular look at it.**

That's how it works. It has to be smoothly automatic, so I just follow the pointers and you get a royalty, period. I don't have to negotiate. And this also means that —

A number of things remain from conventional publishing. There will be a place for existing institutions, like author, editor, publisher, professional referee, in this new medium. There *will* be copyright, and there will be royalty, but it has to be automatic.

Now one of the things that changes drastically is the front-load cost. Conventional publishing is like the plastics industry: the cost of copy one is hundreds of thousands of dollars.

The cost of publishing will go practically to zero, because publishing simply means placing the thing online and registering it. See, that's the thing that we don't have a mechanism in place for yet in Xanadu. But one of the things Xanadu's going to do is fix those by creating a social mechanism where you actually acknowledge that you're publishing. Right now people post things on bulletin boards — "oh, I'm not publishing anything, it's just a note" — but they *are* publishing. And this carries responsibilities having to do with copyright, with trade secrets, intellectual property protection, national security, libel and probably a few other things. And it must be acknowledged by the person who puts the thing on there, that he or she or it is a publisher, rather than just casually tossing this around and saying, hey, the point is to let a thousand flowers bloom. You've got to let them bloom, but you've got to know whose they are.

**In this gigantic cube of data, I could post a lie. I could post canards all over the place...And errors, too.**

And so do we all right now on paper. How do you deal with it on paper? It's going to be just like paper, but faster. In the hypertext network we will have verification links and support links, so that you can say "I endorse this." Or a committee of doctors can say, "We reject this treatment."

**So when you read it you can look and see if people don't agree?**

Right. The development of the social implications and styles of these linking mechanisms is going to be the principal form of evolution as we see it. The Xanadu system is designed so that everything is a flat file, and you can have trillions of links which cover great spans throughout the docuverse, and you can filter these links instantaneously. That's the key. And designing it so it can scale upward and that deterioration would be logarithmic. Meaning that as the size of the corpus doubled it would be one more fetch for most things. Which is tolerable given the anticipated improvement of hardware. This was the key.

**I can see that getting much bigger in every direction.**

That's correct. And so making sure that every direction of search was subject to either log-like or at worst square-root-like deterioration behavior was a key to the algorithm on that.

**Maybe this would be a good time to explain Xanadu. Inception, design —**

The grand way of describing the Xanadu system unfortunately detracts from understanding how it works in small, so let me cover both.

The big scheme is, of course, the worldwide electronic network that will continue to grow as billions of people are attached to it simultaneously over millions of phone lines or satellite connections to their local server. A request at your local machine fans out through the network and brings back fragments that you're implicitly requesting as you wander through your hypertext. Royalties are automatically paid, and in the current conception they're fixed per byte. It's like ASCAP: when you play a jukebox, the same amount of money goes to the authors and producers of each record. This also has some nice limitation aspects, like the number of units of royalty per hour is constant — pardon me, it's the same as the number of bytes shipped.

The key is that you don't monitor who reads what — which is very important. All we know is that so-and-so many bytes left this document, and therefore so-and-so many royalty increments arrive at this document.

**And I'm paying the same fractional cent per byte no matter what I'm reading.**

Yes. We know that so and so many bytes arrived, and we know that so and so many bytes were taken from each document. And they have to equal. But that's all there is.

**So your accounting department doesn't find out the handles on each one, they just know the traffic levels.**

That's right. But also it means that the only way the CIA knows what you read is if they monitor your line. They won't be able to find it out from the sources.

**That's helpful. But that means that Jacqueline Susann and Ted Nelson and I will all get paid the same rate.**

The same *rate*. But she's going to make more money.

**Many people think that information is a commodity to be hoarded, husbanded, doled out carefully**

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**and controlled. You are obviously for unrestricted access to information.**

There can be, in the very nature of the system, no controls on who publishes what. We have legal recourse for libel, for violation of copyright and so on, and there is governmental recourse for violation of laws. But there's no control — it's freedom of the press and freedom of speech, period.

And this has got to be extended that way — by the way, the American Civil Liberties Union takes the same position. So we've established a line. Only last year the great Admiral Poindexter attempted to create a new class of unavailability. He said that there's to be a new class of information called "sensitive and unclassified," which was not to be allowed to foreign nationals or people without the need to know. Thank God we headed that off at the pass, but I see that as just the first battle in the long information wars to come.

A lot of people, and a lot of people in the hacker community, think that copyrighted intellectual property has to go away. And I say no, we can have both, we can have complete access, and intellectual property as a form of reward. So merging these two has been an object of the Xanadu system. See, the way copyright works in Xanadu is that any document can include any other. Any document can quote freely from any other, because it's a pointer. So there's no copyright permission needed — i.e. if you post anything on the Xanadu system at all, that means you have given permission for anyone else to include any part of it in their own document, because that's how it works. However, it's guaranteed that whenever anybody reads part of your document, as an inclusion in the other document, you get the royalty. So it's perfectly fair.

There are two ways to go through Xanadu, along links and along commonalities. If you're looking at a given sentence you can say, "Where else does this sentence appear?", and that's a commonality. That sentence has been quoted so many other different places — you can just flip through all the places it's been quoted. Or you can say, "Tell me how many other places it's been quoted," or "I guess I'd like to see this one and this one and this one" — filtering them by their links and by their owners and by their authors and so on. So you have these two means of travel.

The Xanadu structure is these two things working together, links and commonalities. All the other hypertext systems just have the links. We have this universal quoting mechanism that we make work along with the links.

The way it will look and the way you will interact with it are arbitrary. What remains is the written word and the forms of interconnection. And what Xanadu claims to be doing is only generalizing and electronifying literature as we know it. When I say literature, I mean the procession of interconnected documents — the process of people contributing to this march of documents, which quote each other and have links to other ones.

The other point I make is that the whole computer field is wrong and has to be done over on Xanadu. Let me explain how it works in small.

What's wrong with the personal computer field, as I say here, with the whole computer field, is that we're drowning in files, we don't know what they are. We've got all these stinky little things with silly names; nobody can keep track of them; programs are incompatible. Now Xanadu solves both of those as a form of storage. See, Xanadu is a form of storage, and can be used by just an individual user — it doesn't have to be a vast network. Just on your personal computer it becomes fabulously useful, because it means that no longer do you have a lot of stinky little files.

In Xanadu every byte is only stored once, canonically. So that means that if you take a base letter as boilerplate and write versions of it and send them to different people, and then you want to know what did I send so and so, did I send this to him or that to him, because it's crucial in our contract negotiations. You'll be able to look at the letter you sent to this person, see it side by side with the highlighted things that are different in another version of it. Because they're all referring to the same bytes, and there's the commonalities. You can read along the commonalities, and compare the commonalities in each of them. Commonality is by derivation, it's not scanning to see what's the same. They are the same bytes that are being pointed to, from the one letter and from the other.

**And the structure and the data are intertwined everywhere?**

Yeah. The overhead isn't that bad. And making sure overhead isn't bad is what took us so long. But once you have this, look what it does for the problem of incompatibility of programs...Xanadu allows you then to use links. Everything you want to mark inside a document, like paragraphs, is a link. The data is totally flat — you just have text in a text file. You can have pictures, but that's something else. That means that we can map all data structures into Xanadu just with links. And now anybody can write an application that uses the same data, by plucking the same links in the same fashion, like harp strings. So that brings compatibility.

**What sort of hardware is this on?**

It's in C, so you can compile it to any hardware.

**Isn't this going to involve gigantic storage media?**

No. It's not going to be just in one place. It will be distributed — that's the whole point. Xanadu is designed as a distributed software architecture.

**Please excuse the use of this term, but how user-friendly is this? How hard is it going to be to use?**

Let me give you my diatribe on "user-friendly." I don't like the term because it suggests superficial conviviality rather than clarity. People are larding the software with all kinds of inane sorts of trivializing forms of social behavior, like saying good morning. A globe doesn't say good morning, yet a globe is extremely clear and useful.

**I don't think it's necessary for it to say good morning, or to reach out and grab you by the neck, because if you're not motivated enough to learn how to use the damn thing, you probably don't belong there anyway. But if this thing is going to be as important as you want it to be, it's got to be useful and it's got to be usable.**

Xanadu is a data structure. It's a storage mechanism which shifts the endpoints of links and fragments of documents. The way it looks on the screen will be totally arbitrary. Communicating with this central structure and manipulating this central structure is what it's about. We will have front ends for children; there will be front ends for accountants. There will be front ends for different purposes, and they'll all have different styles. Some of them will be more accessible than others, because they'll hide different features and so on. So what I want to get across is, I think it will be extremely simple and clear. Of all the systems I've seen for computers, Xanadu is the simplest in principle, because it's just these links and these commonalities. But getting the idea across is complex because it's so different. I believe it will be as fundamental as the telephone twenty years from now.

These other systems, where you have to learn these complex query languages, and the relation between this mailbox and that slot and this stack and stuff — these are implementation decisions that some guy smoking his pipe made one night that don't have any logical basis except what so-and-so thought was important on a certain occasion.

To me, design is not making arbitrary choices. I see us as electronifying the structure of literature, which is a well-worked-out and debugged system. Linkage and inclusion, these are the bands that hold together this great procession. And we've sped those up, and everything about the implementation of Xanadu has been to make all other features go away. To make everything arbitrary, to make the boundaries of individual servers, the boundaries of individual documents, to make all of these things inconsequential, and thus to make the whole thing a unified whole representing this electronified structure. And so arbitrary decisions, no. Making decisions that smooth and clarify, that to me is design at its highest.

**What does your demo look like?**

It's tacky. Running on a Mac II is the actual back end storage, which is what Xanadu is, running on an arbitrary terminal, what is it, the Ambassador ...It's divided into four quadrants, and each quadrant holds a different chunk of text, and you can link around clockwise or counterclockwise.

Right now we're crashing a little too often. Any crashes are too often, but we want to get — as long as it's more than one per hour, that's a hell of a lot too many. We've got to get it torture-tested. We're looking for finishing money.

**Where is this being done?**

The work is all being done in San Jose under Roger Gregory. But this has been a shoestring operation from the first. No one will fund it in paradigm. The suits want to talk to suits. And then the suits adopt what we've been doing, and they claim they did it.

I expect the profile of Xanadu adoption to be like that of UNIX. The corporate world will go one way and say this is it. The people who understand will go another.

**The Army and the US government have finally embraced UNIX.**

But you have to understand how it started. Two guys did it in the back room, and corporate said no, we don't allow that. Here's our business plan, this is what we're doing. And UNIX had to fight itself out of the back room over ten or 15 years. The people who knew it, who understood it, prevailed over the suits, and now the suits think it was their idea.

I'm very confident that Xanadu will prevail in the long run. There may be ten or 20 years there where other hypertext systems have more market share. They'll have more gloss, but they won't have the depth. The depth is in having both the linkage and the inclusion. Without the inclusion, without the ability of anything to quote anything else freely, and to see, to work across these bridges of inclusion, and say where did this come from, what is the origin of it, where else has it been quoted — that's the magic of this thing. You can think of it as colored strings connecting all the books, or you can think of it as glass bridges. Whatever.

Your local node is only sampling the entire docuverse. The point is, when you're connected to the Xanadu network, you're connected to the Xanadu network, and it's transparent. Your sample of the docuverse in your server knows where the rest is, reaches out and and brings it back, and it's logically the same as if it's there. What is logically on your server is no different logically from what is on the other server — you treat it all as one. □

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# SeeMORE For 1-2-3:

## *The Big Picture For Spreadsheets*

**By Woody Liswood**

Do you spend significant amounts of time staring at spreadsheets? Do you wish you could stretch the screen in both directions so that you can see, on screen, as much as you can print on paper?

*SeeMORE* does just that. *SeeMORE* is one of the new Lotus *1-2-3* programs which, when added in, gives you a variety of screen sizes to view. *SeeMORE* also lets you control the screen color or use reverse video.

*SeeMORE* works with *1-2-3* Release 2.0 or later on IBM or compatible computers which have CGA, EGA, VGA, or Hercules graphic display cards.

As you know, the normal display screen in *1-2-3* is 76 characters wide by 20 rows deep. Using *SeeMORE* you get various screen sizes depending on the type of display card you use. *SeeMORE* has four looks or fonts: Tiny, Small, Medium, and Normal. The following chart shows just how many characters wide by rows deep you can display with the various adapters.

| | Normal | Medium | Small | Tiny |
|---|---|---|---|---|
| **CGA** | 76x20 | 87x23 | 102x28 | 124x28 |
| **EGA** | 76x20 | 102x38 | 124x38 | 156x53 |
| **VGA** | 76x20 | 102x38 | 124x38 | 156x53 |
| **Hercules** | 76x20 | 116x38 | 140x38 | 176x53 |

Installing *SeeMORE* is a piece of cake. First copy all the program files from the *SeeMORE* distribution disk into the subdirectory where you keep your *1-2-3* program files. Then run the Add-in Manager program to add itself to the default driver file called 123.set. You must also insure that you have the 123.dyn file from your printgraph disk in your *1-2-3* directory. When you inspect your directory you will find that there are a number of .ADN files. If you are using an EGA graphic board and monitor, you should keep the EGAMOR.ADN file and can delete the rest.

Next, run *1-2-3*. Now that you have the Add-in manager installed, an ALT-F10 will invoke it for use. The first time through, select ATTACH from the Add-in managers menu. Choose the appropriate file such as EGAMOR.ADN for your EGA system. Next, you must select a "hot" key to call up the *SeeMORE* menu so that you can access the various features. I selected ALT-F9. I also instructed *1-2-3* to automatically load *SeeMORE* each time I run *1-2-3*. At that point I also said I wanted *SeeMORE* to start using the Medium screen font on my EGA board. That gives me a 102 x 38 screen. That's about it.

Now, every time *1-2-3* boots, I get the smaller font and can see more of my work and I don't feel so frustrated in trying to get 12 months of data on a six month display screen.

The *SeeMORE* menu, when called forth with an ALT-F9, allows you to instantly change between font sizes, or to reverse the display from black on white to white on black. An option menu allows you to change the color of both the background and the foreground. There is an option to only display alpha characters in upper case. And, since the Small and Tiny fonts may be difficult to read at all times, you can have the *1-2-3* menu displayed in a larger font while the remaining screen is at your selected smaller sized font. A rather nice touch.

*SeeMORE* also comes with a program called GRAFPLUS. It allows you to print the *SeeMORE* screens directly on a variety of dot matrix, laser or inkjet printers. Actually, if you have a laser, you run a program called GRAFLASR rather than GRAFPLUS. GRAFPLUS is a memory resident program which must be run prior to your running *1-2-3*. It actually will work with any program which displays standard graphics. GRAFPLUS will allow portrait as well as landscape orientation when printing. When you run it, you select your printer from a menu of choices, then tell what graphics card you are using, tell whether you want reverse printing, and then select landscape or portrait orientation. When you are in *1-2-3*, a Shift-PrtSc shoves the current screen over to your printer.

One oddity about GRAFPLUS is that there is no way to set a default mode for your printer and

**Now every time 1-2-3 boots, I get the smaller font and can see more of my work, and I don't feel so frustrated in trying to get 12 months of data on a six month display screen.**

B1: [W1] 'THIS IS A NORMAL SCREEN FROM 1-2-3 READY

| | A | B | C | D | E | F | G | H | I | J | K | L | M |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | THIS IS A NORMAL SCREEN FROM 1-2-3 | | | | | | | | | | | MANAGE | |
| 2 | SKILL MATRIX | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | 1 | |
| 4 | | | | | | | | | | | | Performance of an | |
| 5 | | | | | | | | | | | | activity as an | |
| 6 | Prepared for: | | | | | | | | | | | individual, senior or | |
| 7 | | | | | | | | | | | | work leader. | |
| 8 | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | |
| 10 | 29-Nov-87 | | | | | | | | | | | | |
| 11 | | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | H | M L |
| 13 | | | | | | | | | | | | | |
| 14 | | | | UNSKILLED. Little or no formal | | | | | | | | | |
| 15 | | C | | education. This basic entry level | | | | | | | | 17 | 18 19 |
| 16 | | L | | skill level for manual skills. At | | | | | | | | | |
| 17 | | E | 1 | the Medium to High Level, this | | | | | | | | 18 | 19 20 |
| 18 | | R | | level would include entry level | | | | | | | | | |
| 19 | | I | | clerical positions. | | | | | | | | 19 | 20 21 |
| 20 | | C | | | | | | | | | | | |
| 29-Nov-87 11:46 PM | | | | | | | | | | | | | |

**Illustration One shows what the NORMAL 1-2-3 screen looks like.**

B1: [W1] 'This is a MEDIUM FONT screen from SEEMORE READY

| | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | This is a MEDIUM FONT screen from SEEMORE | | | | | | | | | | | | MANAGEMENT | | | | | SKILLS | |
| 2 | SKILL MATRIX | | | | | | | | | | | | 1 | | | | | 2 | |
| 3 | | | | | | | | | | | | | Performance of an | | | | | Supervisory Skills to | |
| 4 | | | | | | | | | | | | | activity as an | | | | | direct functions that | |
| 5 | | | | | | | | | | | | | individual, senior or | | | | | are similar in nature | |
| 6 | Prepared for: | | | | | | | | | | | | work leader. | | | | | and objective. Skills | |
| 7 | | | | | | | | | | | | | | | | | | required to motivate | |
| 8 | | | | | | | | | | | | | | | | | | others to perform work | |
| 9 | | | | | | | | | | | | | | | | | | or purchase products. | |
| 10 | 29-Nov-87 | | | | | | | | | | | | | | | | | | |
| 11 | | | | | | | | | | | | | H | M | L | | | H | M L |
| 12 | | | | | | | | | | | | | | | | | | | |
| 13 | | | | UNSKILLED. Little or no formal | | | | | | | | | | | | | | | |
| 14 | | C | | education. This basic entry level | | | | | | | | | 17 | 18 | 19 | | | 20 | 21 22 |
| 15 | | L | | skill level for manual skills. At | | | | | | | | | | | | | | | |
| 16 | | E | 1 | the Medium to High Level, this | | | | | | | | | 18 | 19 | 20 | | | 21 | 22 23 |
| 17 | | R | | level would include entry level | | | | | | | | | | | | | | | |
| 18 | | I | | clerical positions. | | | | | | | | | 19 | 20 | 21 | | | 22 | 23 24 |
| 19 | | C | | | | | | | | | | | | | | | | | |
| 20 | | | | BASIC. This level requires basic | | | | | | | | | | | | | | | |
| 21 | | | | Grammar, Language and Mathematic | | | | | | | | | | | | | | | |
| 22 | | | | skills. There would be no | | | | | | | | | 20 | 21 | 22 | | | 23 | 24 25 |
| 23 | | | 2 | requirement for experience beyond | | | | | | | | | 21 | 22 | 23 | | | 24 | 25 26 |
| 24 | | | | fundemental training which might | | | | | | | | | | | | | | | |
| 25 | | | | be obtained on the job. | | | | | | | | | 22 | 23 | 24 | | | 25 | 26 27 |
| 26 | | | | | | | | | | | | | | | | | | | |
| 27 | | | | BASIC VOCATIONAL - OFFICE. This | | | | | | | | | | | | | | | |
| 28 | | | | level would require knowledge of | | | | | | | | | | | | | | | |
| 29 | | | | normal office procedures or basic | | | | | | | | | 23 | 24 | 25 | | | 26 | 27 28 |
| 30 | | | 3 | vocational knowledge of the trade | | | | | | | | | 24 | 25 | 26 | | | 27 | 28 29 |
| 31 | | | | skills. | | | | | | | | | 25 | 26 | 27 | | | 28 | 29 30 |
| 32 | | | | | | | | | | | | | | | | | | | |
| 29-Nov-87 11:54 PM | | | | | | | | | | | | | | | | | | | |

**Illustration Two shows the same worksheet at MEDIUM.**

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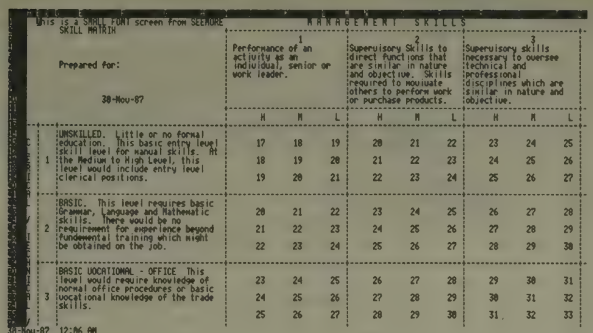

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Prepared for:

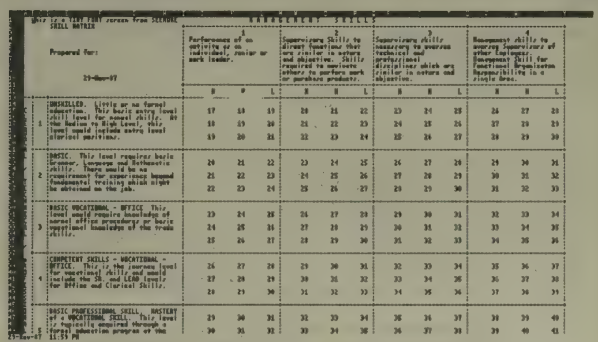
30-Nov-87

| | | 1 Performance of an activity as an individual, senior or work leader. | | | 2 Supervisory Skills to direct functions that are similar in nature and objective. Skills required to manipulate others to perform work or purchase products. | | | 3 Supervisory skills necessary to oversee technical and professional disciplines which are similar in nature and objective. | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | H | M | L | H | M | L | H | M | L |
| 1 | UNSKILLED. Little or no formal education. This basic entry level skill level for manual skills. At the Medium to High Level, this level would include entry level clerical positions. | 17<br>18<br>19 | 18<br>19<br>20 | 19<br>20<br>21 | 20<br>21<br>22 | 21<br>22<br>23 | 22<br>23<br>24 | 23<br>24<br>25 | 24<br>25<br>26 | 25<br>26<br>27 |
| 2 | BASIC. This level requires basic Grammar, Language and Mathematic skills. There would be no requirement for experience beyond fundamental training which might be obtained on the job. | 20<br>21<br>22 | 21<br>22<br>23 | 22<br>23<br>24 | 23<br>24<br>25 | 24<br>25<br>26 | 25<br>26<br>27 | 26<br>27<br>28 | 27<br>28<br>29 | 28<br>29<br>30 |
| 3 | BASIC VOCATIONAL - OFFICE This level would require knowledge of normal office procedures or basic vocational knowledge of the trade skills. | 23<br>24<br>25 | 24<br>25<br>26 | 25<br>26<br>27 | 26<br>27<br>28 | 27<br>28<br>29 | 28<br>29<br>30 | 29<br>30<br>31 | 30<br>31<br>32 | 31<br>32<br>33 |

30-Nov-87 12:06 AM

**Illustration Three shows that worksheet at SMALL.**

B1: [W1] 'This is a TINY FONT screen from SEEMORE READY



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| | | 1 Performance of an activity as an individual, senior or work leader. | | | 2 Supervisory Skills to direct functions that are similar in nature and objective. Skills required to manipulate others to perform work or purchase products. | | | 3 Supervisory skills necessary to oversee technical and professional disciplines which are similar in nature and objective. | | | 4 Management skills to oversee supervisors of other technical management skill for functional organization. Responsibility is a single area. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | H | M | L | H | M | L | H | M | L | H | M | L |
| 1 | UNSKILLED. Little or no formal education. This basic entry level skill level for manual skills. At the Medium to High Level, this level would include entry level clerical positions. | 17<br>18<br>19 | 18<br>19<br>20 | 19<br>20<br>21 | 20<br>21<br>22 | 21<br>22<br>23 | 22<br>23<br>24 | 23<br>24<br>25 | 24<br>25<br>26 | 25<br>26<br>27 | 26<br>27<br>28 | 27<br>28<br>29 | 28<br>29<br>30 |
| 2 | BASIC. This level requires basic Grammar, Language and Mathematic skills. There would be no requirement for experience beyond fundamental training which might be obtained on the job. | 20<br>21<br>22 | 21<br>22<br>23 | 22<br>23<br>24 | 23<br>24<br>25 | 24<br>25<br>26 | 25<br>26<br>27 | 26<br>27<br>28 | 27<br>28<br>29 | 28<br>29<br>30 | 29<br>30<br>31 | 30<br>31<br>32 | 31<br>32<br>33 |
| 3 | BASIC VOCATIONAL - OFFICE This level would require knowledge of normal office procedures or basic vocational knowledge of the trade skills. | 23<br>24<br>25 | 24<br>25<br>26 | 25<br>26<br>27 | 26<br>27<br>28 | 27<br>28<br>29 | 28<br>29<br>30 | 29<br>30<br>31 | 30<br>31<br>32 | 31<br>32<br>33 | 32<br>33<br>34 | 33<br>34<br>35 | 34<br>35<br>36 |
| 4 | COMPETENT SKILLS - VOCATIONAL - OFFICE. This is the journey level for vocational skills and would include the OA- and LEAD levels for Office and Clerical Skills. | 26<br>27<br>28 | 27<br>28<br>29 | 28<br>29<br>30 | 29<br>30<br>31 | 30<br>31<br>32 | 31<br>32<br>33 | 32<br>33<br>34 | 33<br>34<br>35 | 34<br>35<br>36 | 35<br>36<br>37 | 36<br>37<br>38 | 37<br>38<br>39 |
| 5 | BASIC PROFESSIONAL SKILL. ASSIST or a VOCATIONAL SKILL. This level is typically acquired through a formal apprentice program or the | 29<br>30<br>31 | 30<br>31<br>32 | 31<br>32<br>33 | 32<br>33<br>34 | 33<br>34<br>35 | 34<br>35<br>36 | 35<br>36<br>37 | 36<br>37<br>38 | 37<br>38<br>39 | 38<br>39<br>40 | 39<br>40<br>41 | 40<br>41<br>42 |

29-Nov-87 11:51 PM

**Illustration Four shows the total for TINY.**

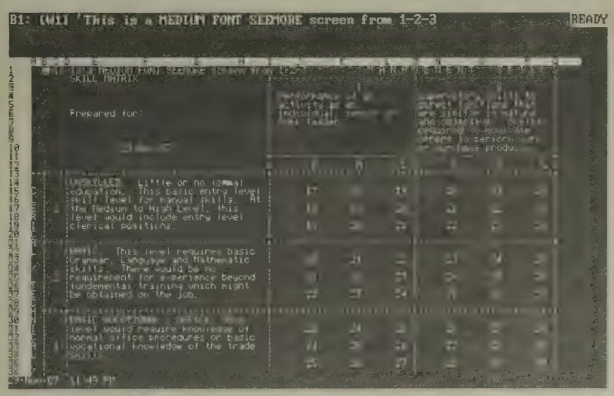



**Illustration Five shows the Medium screen printed in as a reverse screen.**

screen combination. You are encouraged to run a .BAT file and invoke GRAFPLUS using a command line sequence.

All in all *SeeMORE* is a program which Lotus 1-2-3 should have already supplied. Since it is not there, *SeeMORE* is worth having. I cannot imagine not using it now that I have had it up for a few weeks.

I have run it on two different 386 based machines and on a 286 based machine. No problems.

*SeeMORE* has become a must-have utility for 1-2-3. If you work with spreadsheets you really should have it as part of your working environment. (Personics Corporation, 2352 Main Street, Building 2, Concord, MA 01742, 617/897-1575.) □

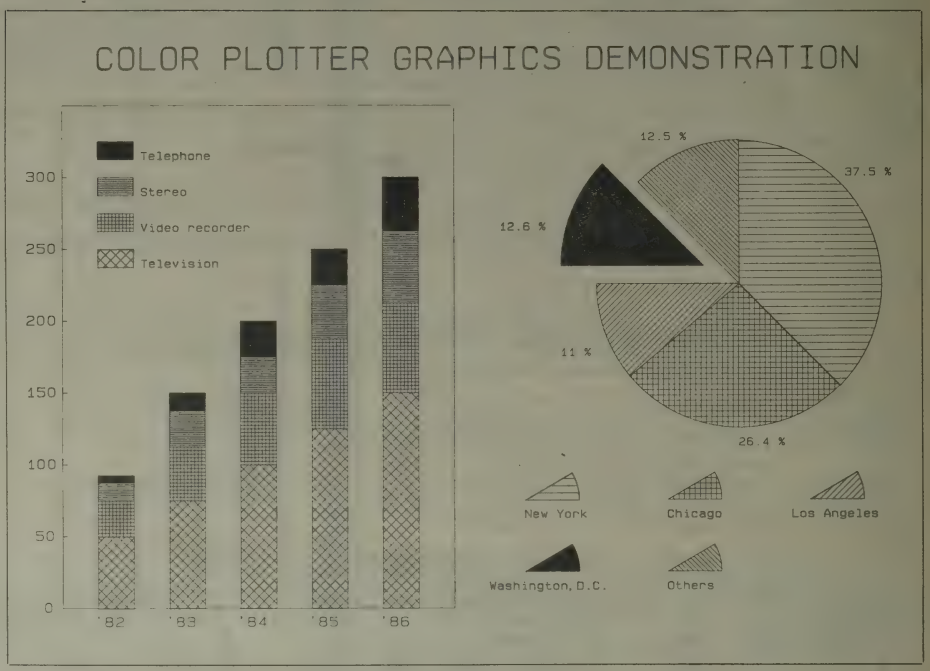
# Fujitsu FPG-310 Color Plotter

By Woody Liswood

The people at Fujitsu say their color digital plotter is really an HP 7475A plotter, only better. But is it? It doesn't look like an HP plotter. It is quite a bit smaller. The price is also smaller — the FPG-310 retails at $1,200.

The plotter handles A3 (8½" x 11") and A4 (11" x 14") size paper. It will also handle paper down to the size, according to the documentation, of a postcard.

The resolution of the FPG-310 is .025 mm per step, a finer resolution than many of the plotters on the market which also emulate the HP line. The Fujitsu does not use the standard HP plotter pens; the company says the HP pens did not provide a fine enough resolution, so it had to make its own proprietary pens. (The pens, however, created the only problems I encountered in evaluating this unit.)




**The Fujitsu FPG-310 offers high resolution and precision at a relatively low price.**

## A Few Minor Problems With The Pens...

In order to save weight (and probably expense in manufacturing), the plotter has a single motor to drive the paper movement mechanism as well as the pen carousel. Because everything is tied together, the pen carousel moves every time the paper moves. To keep the pens where they should be with all this violent motion, the carousel locks into position, rather than just sitting there as with most other plotters. This tends to be inconvenient; only after around thirty sessions with the plotter was I able to lock it in place on the first try almost every time.

Also, the pen capping mechanism doesn't work as well as it should. Rather than having rubber cups to keep air away from the pen points, the Fujitsu has indentations in the bottom of the permanent part of the carousel movement platform. I found that the transparency pens tended to dry out during use since they were not capped air tight while waiting their turn.

And, lastly, the pen holder is a plastic device which grips the pens by the middle. Since there is not a capping device on the pen to hold the pens at two points, the pens can easily be knocked out of the holder while you are inserting more pens.

Other than the problems with the pens, however, the plotter worked fine.

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## ...But Great Overall Performance

The Fujitsu has some interesting features which make for ease of use.

The plotter comes with both a parallel and a serial interface. You do not need to tell it which one to use — the Fujitsu monitors both ports and uses whichever one becomes active first when the plotter is turned on. I tried both the ports and had no problems with either one; the plotter worked well with a SmartCable to monitor the serial interface. The Fujitsu can also be ordered with a GPIB interface, which conforms to the IEEE-488 standard.

There are three sets of DIP switches. One, located at the back of the plotter, controls the serial interface. The other two are located in the pen compartment on the plotter and are easily changed as needed. The left DIP tells the Fujitsu what type of paper is loaded and in what direction it is inserted. Also controlled are paper detection and the selection of a 1K or a 12K buffer. For some reason, the default setting on the buffer is 1K rather than 12K. The right DIP controls the changeable items for the serial port.

The paper feed mechanism is a dream to use. There are two pinch type rollers. The paper is rested against the rollers and a paper set button is pressed. The rollers then grab the paper and move it into position. From then on, the plotter controls everything. When the plot is finished, another press of the paper set button ejects the paper from the Fujitsu. The right hand pinch roller is movable so that you can work with various size papers.

The Fujitsu comes with two packages of pens, six for paper and six for transparency work. The package also includes 8½" x 11" and 11" x 14" inch plotter paper.

The FPG-310's manual is adequate. It is obviously a translation from Japanese and contains some very awkward phrasing. It does, however, tell you what you need to know. It is also illustrated with drawings on some important points, such as how to load the pen carousel and what the DIPs should be.

To really give the plotter a workout, I used it on a project which required over 150 graphs, created in *Freelance Plus*, to be plotted, both as transparencies and as paper plots. I created a batch file in *Freelance*, told it to pause at the end of each plot, and let it rip. No problems. All the graphs came out clean.

I found I had to change the pens after about 25 plots. I did use a lot of black, however. As mentioned before I also found that the transparency pens tended to dry out when left in the holder for more than an hour or so.

To test the repeatability of a plot, I repeated, without taking the paper out of the machine, a plot 10 times. There was identical registration each time.

I used the plotter with *Lotus 1-2-3*, *Freelance Plus*, *SuperCalc 4*, *Graphwriter* and *Energraphics*. In each program, I designated that I had an HP 7475A plotter. Again, there were no problems.

All in all, a good little plotter. If you want the versatility of an HP 7475A plotter, with very fine resolution pens and a moderate price, the Fujitsu is really an option you should examine. □

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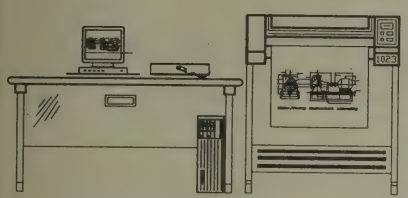

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## A DOS User Asks:

# *Should You Buy A Macintosh To Get HyperCard?*

**By Birrell Walsh**

Living in the MS-DOS world, I hear rumblings over the line in Mac land. It's like Canadian politics — you know they have them, but you don't know a lot of detail. Then Apple introduced *HyperCard*, and the rumblings grew to a roar. Danny Goodman's *HyperCard Handbook* was on B.Dalton's and Waldenbooks' bestseller lists. Everyone I knew was talking about this thing. Every magazine seemed full of it. What was it they were all so enamored of?

I found out. It cost me $200 of my own money. My editor will tell you I do not part with money gracefully.

First I went out and bought (for $30) *The Complete HyperCard Handbook* by Danny Goodman. It weighs several pounds and has sold several hundred thousand copies in the last few months. I had to hunt to find a copy. I got it though, and I read it like a science-fiction novel, all 720 pages.

That book got me so jazzed that I had to, just *had* to try the program out. I went down to the computer room at work where they have Macs. We are converting from DOS to Macs at my shop, which is a story in itself. The fellows were kind enough to let me try *HyperCard* on their machine. So simple, so smooth, so like a cartoon. Yet in a few moments I had created a little two-frame animation. If you have ever tried to make an animation with DOS programming languages, you know how difficult it can be. Even dedicated animation products make it difficult. I did it in five minutes. This was impressive indeed.

I resisted buying a Mac. It was hard, but not that hard just after Christmas. Instead I shopped around until I found the best price I could to rent a Mac, a hard disk, and a printer for eight days. It was at Frog Computer in Berkeley, an establishment run out of a barn near a swamp, but with great prices and friendly people. For $167 I made it out the door with the Mac Plus, the printer and the hard drive and went home to immerse myself in this thing.

Emerging a week later with glazed eyes and a long-suffering wife, I can say three things about this system:

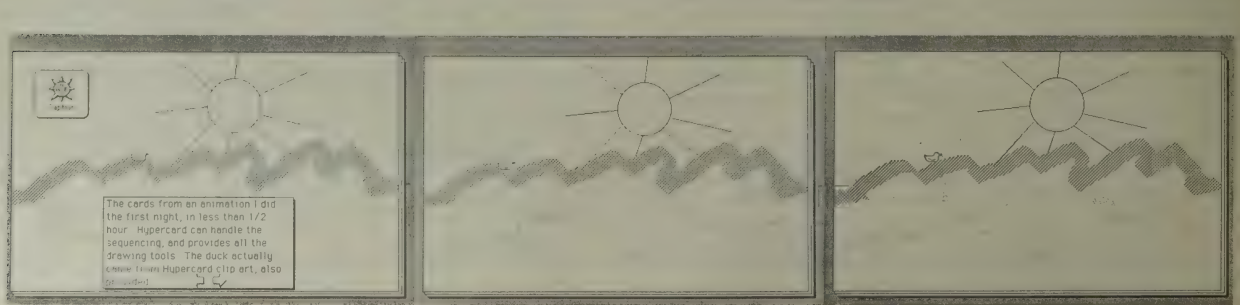
- It uses the Mac interface superbly, and that interface is lovely.
- It allows you to create a really personalized information system that you can also share with other people. In one week I made six different types of applications from scratch. They ranged from a personal accounting system and a network mail system to cartoon animation.
- Behind the smoothness and the facility is a very subtle, very powerful object-oriented programming system, the best I have seen.

The only negatives are its hunger for memory and its slowness. You really do need a meg of memory and a hard disk to use *HyperCard*. The slowness is relative. It is faster to use *HyperCard* than to load and unload all the applications it may replace.

### Meet The Macintosh Interface

If you use DOS, you have heard of the Mac interface. You have seen an imitation of it — a pale imitation — in Microsoft *Windows*. Everything is done by pulling menus down and clicking on your choice. To copy a file, you grab its icon and move it into a picture of a file folder. Grind, grind — it's copied. It's so simple, so clear. And all the applications have the same interface. Once you master one, you have them all about half-learned.

This means that the training time for people who use computers is cut in half. That's the time it takes you to learn an application, and the time it takes the people who work with you or for you to learn it. Figure how much it costs to pay them while they learn. Figure how much it costs to get someone to teach them. Figure your losses while they try to decode DOS, and DOS's charmingly opaque applications. That's what it costs you to make a DOS computer system work in your house. Now take half that amount. That's what you save by using the Mac. A report by Peat Marwick, quoted in *Infoworld* (1/25/88), found a 45% improvement in productivity for "knowledge workers"


The cards from an animation I did the first night, in less than 1/2 hour. Hypercard can handle the sequencing, and provides all the drawing tools. The duck actually came from Hypercard clip art, also

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using a Mac.

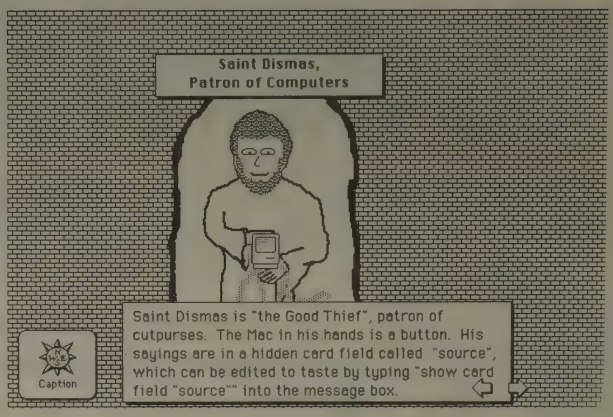
*HyperCard* is the same, only more so. It uses a menu structure that is like all the other applications, except you can tear the menu off (by holding the mouse button down while dragging the cursor out of the menu — a copy of the menu follows the cursor). This new feature means that you can move the tool menu off to a corner of the *HyperCard* screen, and leave it open while you tinker.

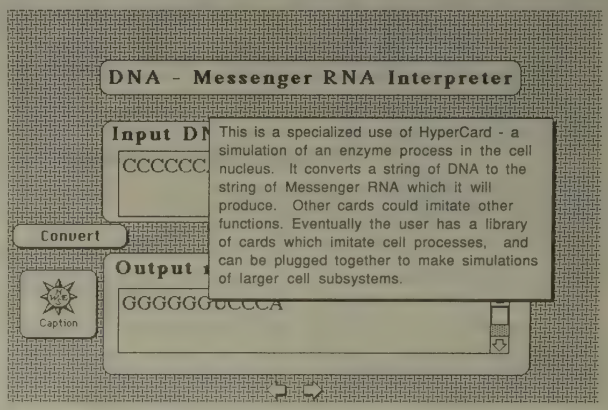
The tool kit allows you to choose a browsing tool, a button tool, or a field tool. The browsing tool is what you use to operate the system — to push buttons, to move to a text field to write material into it. The button tool and the field tool allow you to move, resize, and work on buttons and fields.

"Work on" means just about everything you can think of. When you select a button or field, you get access to the "button info" or "field info" choice on the "objects" menu. You can change the its icon, its shape, and the font used to write its name. You can make it transparent, opaque, or drop-shadowed. You can view, modify or change scripts that tell the button or the field what to do.

In DOS I have never been confronted with such choices about any screen object. I consider it a major achievement to get a program to acknowledge my Logitech Mouse, let alone choose a font. But this is the Mac interface at its most accessible. Because all these things are available to you, you can easily forget that only a master programmer with a lot of spare time could do any of them in MS-DOS languages. In *HyperCard*, you have access to these features by snatching them off a menu.

You also have a very complete set of drawing tools. You can draw, paint, spray-paint, make squares, rectangles, spinning polygons and circles. You can fill them and empty them with any of 40 patterns. You can use straight-line and grid tools in your first shaky steps into this graphic medium, and then move on to more noble efforts. Or you can (as I did) borrow from *HyperCard*'s fairly extensive set of clip art. *HyperCard* also welcomes clip art from other programs — another virtue of the Mac is its clipboard for copying both text and graphics between programs.


Saint Dismas,
Patron of Computers
Saint Dismas is "the Good Thief", patron of cutpurses. The Mac in his hands is a button. His sayings are in a hidden card field called "source", which can be edited to taste by typing "show card field "source"" into the message box.
Caption


DNA - Messenger RNA Interpreter
This is a specialized use of HyperCard - a simulation of an enzyme process in the cell nucleus. It converts a string of DNA to the string of Messenger RNA which it will produce. Other cards could imitate other functions. Eventually the user has a library of cards which imitate cell processes, and can be plugged together to make simulations of larger cell subsystems.
Convert
Caption

## Yes, But What Good Is It?

OK, says Gentle Reader, so you like the Mac Interface. What is *HyperCard* good for?

That is a little like asking what a computer is good for. There are so many uses. On my first day with my rented system, I expanded my five-minute two-card animation into a twenty card epic with separate background and foreground. "Cell animation," I think Disney called it. I made a spray-paint sea and borrowed a duck from the clip-art stack. For the last few frames, I modified the duck with the *HyperCard* paint tools so it could fly off the screen. This whole job, including a couple of re-dos, took me about 40 minutes. That means that you or one of your employees can do animated presentations with *HyperCard*, to make your case to clients or senior management or the IRS auditor or whomsoever you need to convince — without buying a separate program like Paul Mace Software's GRASP in the DOS world.

Time to Get Serious. I wanted to have a way to keep records of all my business expenses. Another file should show all my income, by project. A third, summary card would tell me my current net. *HyperCard* made this so easy that I was finished in an hour and a half. That included designing all three stacks — income, expense, and summary. I put fields on each of the record stacks that allowed me to enter the date, who the money came from or went to, the purpose, and so forth.

Text fields in *HyperCard* are easy to design. You paint them on with the "field tool." You can set all the attributes in the "field info" window. And you do not need to worry about data types. *HyperCard* stores all information as text. Dates, numbers, Boolean true or false values, text itself — all these are stored in text fields. *HyperCard* converts them into numbers or whatever internally, without requiring you to attend to the matter at all.

The summary card has six buttons, all conceived, designed and installed within my hour-or-so design time. They are of interest because each button sends messages to other stacks. The "browse" buttons for income and expense link to those stacks. The "New Expense" and "New Income" buttons send me to the last card of the respective stack, and then make a new (blank) card for me to fill in. The "Update the Net" button actually has some script work in it. It goes to each of the stacks, and then steps through the cards of that stack, adding the amount on the card to local variables in the script — "Income" and "Expense." Then it returns to the summary card and places Income, Expense, and (Income-Expense), preceded by dollar signs, in the appropriate fields. It also updates the "Net As Of:" field, so I know how recently I did my last update.

It was extraordinary just how easy it was to work with *HyperCard* as a business tool. This is a simple application, true, but it was ready to go in less time than it usually takes to read a chapter of documentation in a DOS program.

Because the Hypertalk language is powerful, you get leverage. A little work produces a lot of usefulness. In the DOS world, only Borland's *Paradox* database approaches *HyperCard*'s combination of usefulness and power. The leverage combines with *HyperCard*'s small-module design to make it wonderful for making custom applications. *HyperCard* is going to be the darling of power users. They will at last be able to design things just the way they want for themselves and others. You can make a basic *HyperCard* application that becomes the corporate standard,

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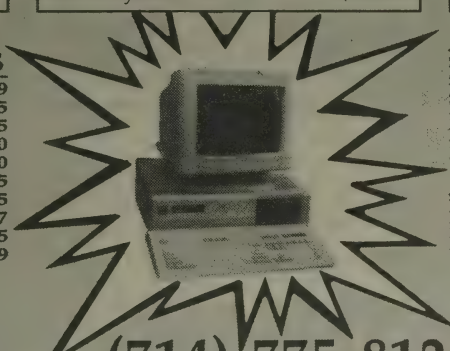

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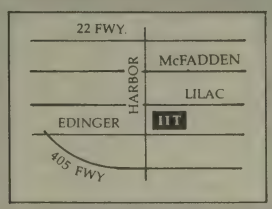


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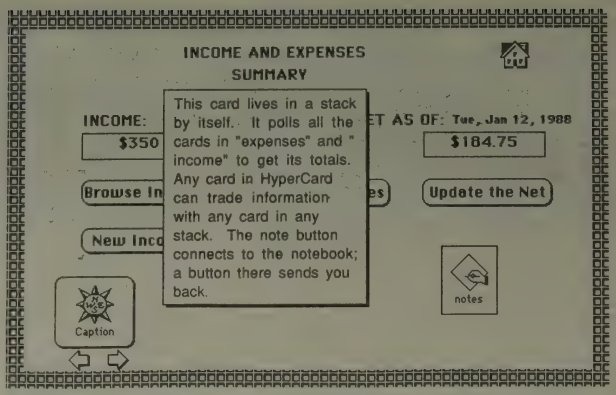
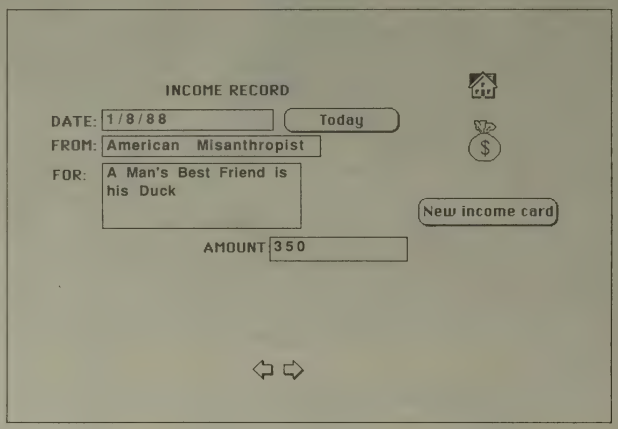
and then let each user embellish it without taking away the interchangeability. We are going to see a lot more personalized software — more than we have ever seen in the history of personal computing — because of *HyperCard*.

The sixth button on my income summary card leads off to my personal notebook. It took me several days to design the notebook, because I wanted it the way I wanted it. One of the pleasant things about most *HyperCard* applications is that your design process is iterative. You build it one way. Then you use it for a few days and decide that you want the "Next card" button on each card to be in the same place, so you don't have to move the mouse while flipping through pages. You change the stack. The change does not lose the data you have entered, and you can always change it back. This kind of flexibility leads to a quick evolution in applications.

Anyway, the sixth button is what I called a magic button. It is copied from the "front page" of the notebook stack to any card in any stack. The script of the magic button is designed to do one thing the first time it is pushed, and a very different thing thereafter. On the first push it remembers what card and what stack it has been installed upon. Then it goes to the notebook stack and creates a new blank page. It sets the "Return Whence" button on that notebook page to link (that's HyperJargon for "jump") back to the card on which it (the magic button) has been installed. It memorizes the card number of the new page in the notebook. It then jumps back to the stack where it (the button) has been installed, and rewrites its own script so that it becomes a link to the notebook page. Now if you examine the script, all you find is an instruction to jump to the notebook page when the mouse button is released. The original button script is gone from this copy, although it remains in the master "magic button" on the cover page of the notebook stack.

This was what I wanted to do with my application. It allowed me to set up links between any card anywhere and the notebook, because for me (as a writer) the notebook is pretty much the center of my collection of stacks.


INCOME AND EXPENSES
SUMMARY
This card lives in a stack by itself. It polls all the cards in "expenses" and " income" to get its totals. Any card in HyperCard can trade information with any card in any stack. The note button connects to the notebook; a button there sends you back.
INCOME:
$350
AS OF: Tue, Jan 12, 1988
$184.75
Browse In
Update the Net
New Inco
notes
Caption




You might design your *HyperCard* system differently. It would be just as possible for you as it was for me. Now where in the DOS world is there anything quite like this?

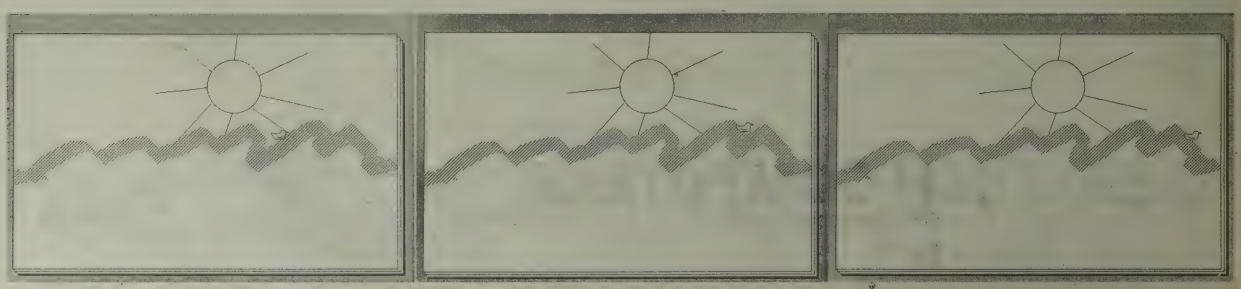
The rest of my notebook shows other features of *HyperCard*. One button stamps the date at the top of the text section. Another prints the card in report format — a button I had not debugged when the lease ran out on my Mac. Two more buttons write the text field to an ASCII file on disk or import an ASCII file to the text field. The "Return Whence" button goes to another card, if this notebook page was created with a "magic button." Otherwise it complains "Nowhere to go!" in a dialog box.

The magnifying glass reveals one of *HyperCard*'s delightful surprises. There have been a lot of complaints that the unit of information in *HyperCard* is the card. No matter how crowded that card may be, you can only get so much information on it, right? Well, no. There is a type of field called "scrolling" in the Macintosh world. You can type, apparently forever, into a scrolling-box field, and it keeps on taking the information. As with a word processor, you can see only one screenful of text at a time, but you can scroll up and down at will through the file. The magnifying glass is a toggle I installed. When it is off, the text appears only on the left side of the screen, on what appears to be lined notebook paper, while the utility buttons are accessible on the right-hand side. Toggle the magnifying-glass button and the notebook's text field becomes a scrolling box which fills both the left and right pages of the book. You have almost a full screen on which to write, and your file size seems unlimited. Another toggle, and the text field jumps back to the left side of the paper.

I decided to build a network mail system with *HyperCard*. Nothing much to it. *HyperCard* cards and stacks know how to copy themselves to other directories. Any network of Macintoshes that have shared directories can use *HyperCard* messages. This particular system looks for a directory named after the person in the first field. After you press the "send it" button in the upper right corner, it attempts to deliver the message, and if it succeeds it tells you so with a "delivered" stamp in the lower right of the card. The message proper is another scrolling-box with unlimited text-room. Time on this development: one hour, maybe less. You can send whole stacks as messages, with all their data, pictures, and built-in actions. This is a new order of usefulness in electronic mail.

There was time before Frog got its computer back to fool around with a couple of other features. I built a small shrine for St. Dismas, the patron saint of thieves and of computers. The Mac in his hand is a button. If you click on it, the Saint's advice to you appears fortune-cookie-style on the wall beside him. Another click provides different advice, because his sayings are chosen at random by the button script from a single hidden text field on this same card. You can inspect and edit the field at will. Every computer should have a shrine in it, don't you think?

The last application is scientific. It is a sort of calculator that converts the DNA code into an intermediate code used by Messenger RNA inside the cell. It can be used as is, or it could be included in a larger simulation in which different *HyperCard* stacks serve as the parts of a simulation. *HyperCard* may become best known as a simulator, in fact, be-



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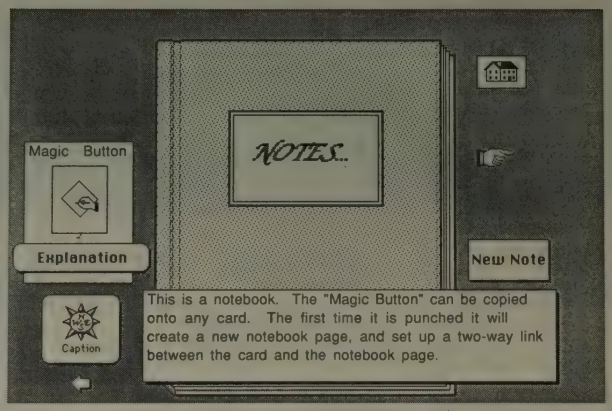
cause it makes simulations accessible to everyone. You could as easily create a simulation of the stock market as of DNA and RNA.

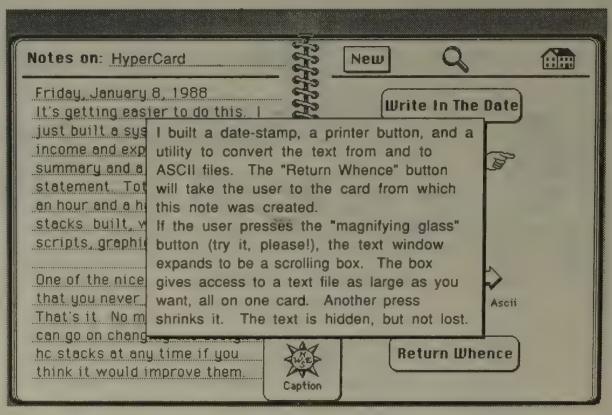
So — in less than eight days of spare time I developed an animation, an income and expense tracking system, a personalized writer's notebook with a linking system to connect its pages to any other card, a network mail system, a shrine with an interactive saint, and the beginnings of a scientific simulator. You, fellow DOS victim, could do the same. *HyperCard* is so good, so usable, that even visitors from another operating system can find their way around and be doing useful things right away.

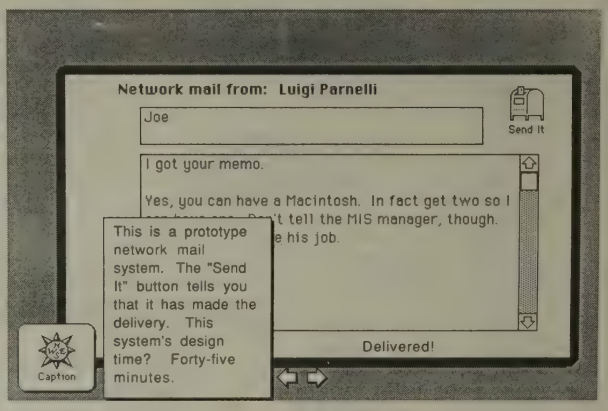
## The Hypertalk Environment

There's more to it, really. Behind all this user-friendliness, Bill Atkinson and his comrades at Apple have built a very powerful new language. The *HyperCard*/Hypertalk system is actually an object-oriented programming language. In the DOS world we have Digitalk's excellent *Smalltalk/V*, reviewed some time ago in *MicroTimes* (December 1986 — No. 27). Hypertalk is incomparably more friendly than Smalltalk. Many of Hypertalk's commands are graphic and icon-driven rather than written. Only in the Macintosh do you find this kind of multi-media tool. At least, you don't find it in DOS. But the language is not simple just because it is easy to use. Fields, buttons, cards, stacks and *HyperCard* itself all have scripts attached to them that tell them how to respond to messages from you and from other objects in the system.

You can change or add to those scripts to make a very subtle system out of *HyperCard*. You can, for instance, run other programs from within the *HyperCard* environment. You have already seen that a script can rewrite itself, as did the script for my "magic button." Cards, stacks, buttons and fields can copy, change and delete themselves and each other. I have never seen such active "documents" as these *HyperCard* creatures. The analogy with living systems is unavoidable. The *HyperCard* system follows the directives of


Magic Button
NOTES..
Explanation
New Note
Caption
This is a notebook. The "Magic Button" can be copied onto any card. The first time it is punched it will create a new notebook page, and set up a two-way link between the card and the notebook page.


Notes on: HyperCard
New
Friday, January 8, 1988
It's getting easier to do this. I
just built a sys
income and exp
summary and a
statement. Tot
an hour and a h
stocks built, y
scripts, graphi
One of the nice
that you never
That's it. No m
can go on chang
hc stacks at any time if you
think it would improve them.
Write In The Date
I built a date-stamp, a printer button, and a utility to convert the text from and to ASCII files. The "Return Whence" button will take the user to the card from which this note was created.
If the user presses the "magnifying glass" button (try it, please!), the text window expands to be a scrolling box. The box gives access to a text file as large as you want, all on one card. Another press shrinks it. The text is hidden, but not lost.
Ascii
Return Whence
Caption


Network mail from: Luigi Parnelli
Joe
Send It
I got your memo.
Yes, you can have a Macintosh. In fact get two so I
tell the MIS manager, though.
his job.
Delivered!
This is a prototype network mail system. The "Send It" button tells you that it has made the delivery. This system's design time? Forty-five minutes.
Caption

scripts just as a cell obeys the DNA and RNA within it. Each script functions as a message "handler," so you can redesign the responses of this living system, but it remains surprisingly, almost eerily, like a living being. Don't believe me on this one — try it for yourself.

All this power is available to the user along one of the most gently graded learning curves I have ever seen. *HyperCard* allows a user to remain a browser as long as she or he wishes. The system comes with a clutch of pre-built applications to explore and use. Then one day perhaps the user will make a new card; the next day, customize a background. Step by step, the user becomes comfortable with the system and gradually ventures to program. Because most scripts are short, it is easy to start. Because the Hypertalk language is like English, the syntax is sensible to a newcomer. It is not trivial, though, and an experienced user will find plenty of challenges.

I guess that answers the question we started out with. Should a DOS user get a Mac to have access to *HyperCard*? Yes, if...

- If you want to see and use a superb interface.
- If you want truly customized information systems.
- If you want to use the system that everyone else is going to imitate.

It is very useful, and very beautiful. There is nothing like it in DOS. *HyperCard* is the best thing since sliced chips. □

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## Resources:

*HyperCard* is bundled with all Macintoshes being sold, for free. You can buy it for $49 from any Macintosh software store. It requires one megabyte of memory and "strongly desires" a hard disk.

Danny Goodman's *Complete HyperCard Handbook* is published by Bantam Computer Books for $29.95.

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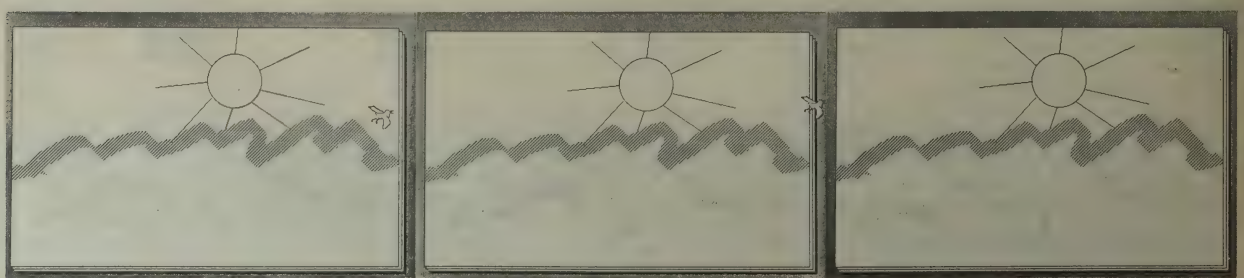

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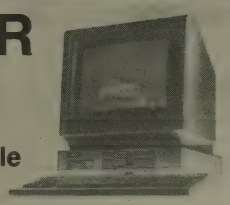

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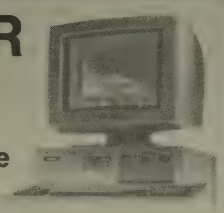

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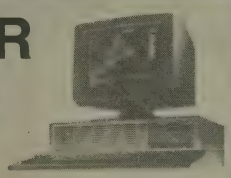

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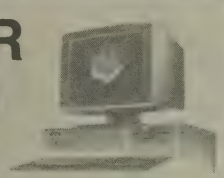

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# The Cordata WPC Model CS 40

## *Functionality You Can Afford*

**By David Batterson**

Another South Korean-made XT clone has joined the ranks of Leading Edge, Blue Chip, Epson Apex, Amstrad, Vendex, and GoldStar. The Cordata WPC Model CS 40 is another low-end (but good quality) PC for the home office, student, or for use at a company workstation. Cordata Technologies, Inc. (founded as Corona Data Systems, one of the first PC clone makers) markets the computers, which are made by Daewoo Electronics Co., Ltd.

The WPC CS 40 has a clean look. Instead of a separate monitor, it has the monochrome monitor (green) built into the main unit. It offers CGA graphics (providing 16 shades of gray) and AT&T 6300 support, which allows full 640 x 400 resolution for CAD/CAM use. This latter support is not offered as a standard feature on other IBM-compatibles.

There are the usual standard XT clone features, including a video port for color monitor. You get MS-DOS 2.11 (a little puzzling — why the old version?) plus the now-standard bundled software, including beginner's disk (*PC Pal*), *PC Tutor*, and an integrated package called *Electric Desk*.

PC users who have experienced fuzzy screens will be pleased with the excellent resolution. When I loaded my regular communications program, *ASCII Pro*, I re-installed it and changed the computer type. Instead of IBM XT-compatible, I switched it to AT&T 6300, which the Cordata can emulate.

*ASCII Pro*'s Editor seemed to display the lines faster on the Cordata than it did on the Vendex Turbo-888-XT, which I reviewed recently for another publication. And the text is sharp and clear.

With many programs, like *ASCII Pro*, *Tracker* or *Electric Desk*, you can change the color palettes. Of course, with the Cordata, those "colors" are different shades of green. You can type with black on light green, light green on black, or other variations depending upon your personal choice.

Setup of the Cordata is easier than hooking up a VCR. Plug in the power cord, cable your modem to the serial port, your printer to the parallel port, and plug the keyboard in the front socket. Make sure the monitor switch in back is set to MONO. The speed switch should be set to 8MHz already; if not, change it. Done!

You get the usual self-test upon booting, including display of speed selected. (If it says 4.77MHz, you switched it the wrong way!) You'll have to set the clock and calendar to correct time and date.

The first-time user should probably boot *PC Pal* at this point. It's a basic primer on the computer's parts and terminology, plus explanations of the keyboard, software types and BASIC. If you are switching from Apple, Commodore, etc., you can skip this disk, and instead look at *PC Tutor*.

This disk starts out with basic MS-DOS commands and explanations of FILESPECS, and continues into more complex areas. This is must reading if you are not familiar with IBM-type filenames. (One example of a proper filename, however — 4__SCORE.&7 — seems to be a bit off-the-wall. It is a legal name, but would not be commonly used by most, so it could be confusing to newcomers. They should have stayed with names like LETTER1.TXT or FUNGAME.BAS.)

Many users will never get into the more arcane areas of MS-DOS, such

*David Batterson has been a freelance writer for many years, and was formerly a BBS co-Sysop. You may send comments to MCI Mail: DBATTERSON.* *Copyright © 1988 by David Batterson. All rights reserved.*

### STANDARD BENCHMARK TESTS

| | | |
|---|---|---|
| Checking memory block write | ticks: 312 | Compared to orig. IBM PC 161% |
| register to memory | 294 | 167% |
| memory to register | 294 | 166% |
| register to register | 331 | 166% |
| divide by register | 305 | 167% |
| divide by memory | 363 | 166% |
| multiply by register | 287 | 167% |
| multiply by memory | 331 | 168% |
| stack operations | 268 | 166% |
| far jumps, far calls | 318 | 163% |

**Total:** 3103 clock ticks (172 seconds);166% overall compared to IBM PC (100%)

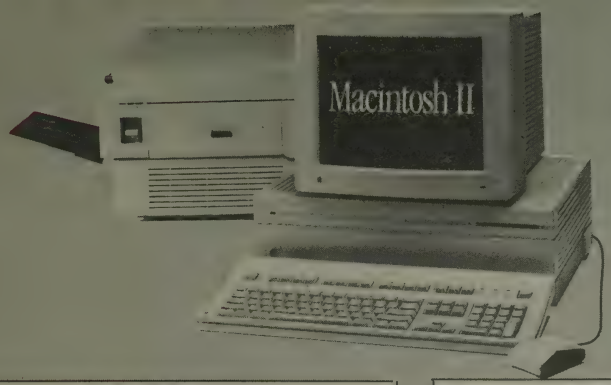
**WRITING TO DISK TEST** — measures how long it takes to write a 64K sequential file onto the disk in 128-byte chunks.
**READING FROM DISK** — measures time to read the 64K file in 128-byte segments.
**THE SIEVE OF ERATOSTHENES** — Eratosthenes (c. 275 – 195 B.C.) was a Greek scholar and onetime head of the Alexandria library. He discovered this technique for finding prime numbers. This tests how long it takes to do one "iteration of the sieve."
**CALCULATING WITH SINGLE-PRECISION NUMBERS** — measures how long it takes to perform 10,000 multiplication and division operations using single precision numbers.

*(speed in seconds)*

| COMPUTER | WRITE | READ | SIEVE | CALC |
|---|---|---|---|---|
| Cordata WPC CS 40 | 31.5 | 29 | 108 (*) | 35 |
| Leading Edge PC | 32 | 29 | 153 | 46 |
| TI Professional | 31 | 31 | 171 | 52 |
| Data General One | 56 | 55 | 229 | 69 |
| Tandy 1000 | 56 | 55 | 226 | 68 |

(*) 1,651 prime numbers found

# Your Mac II Connection

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as "REDIRECTION, FILTERS AND PIPES." But it is good that the explanations are here, and in the included MS-DOS manual.

Formatting, checking disks for errors, copying files, and similar commands are explained fairly well.

Although there is a standard 9-contact "D" video port for an RGB monitor, where would you put the monitor? Unlike most clones, the Cordata's monitor is part of the main unit. It is attached by four screws, but removing them would leave the frame in front still attached. Therefore, a color monitor might have to be put to one side. It's confusing, and there is no explanation. If you want a color monitor, you should ask the salesman about this first. (The actual viewing area of the 12" monitor is 10-3/4", by the way.)

Installation of adapters is explained and illustrated. It looks like a routine job. If you want to install an 8087 math co-processor, you should get some help if you are not familiar with this process.

You have a choice these days of a regular hard drive, or newer ones which are on a card. The Cordata does not come with a hard drive controller.

The 130-watt power supply could prove a bit skimpy as you add on, and you might want to replace it with a 150- or even 200-watt supply. Prices of these are dropping, just like drives, chips and printer paper.

The 512K memory can be upgraded to 768K. Your own needs will determine whether you should increase memory capacity. (Remember when we thought 128K was a lot of memory?) For most purposes, it will be fine. If you are into heavy desktop publishing, or are running memory hogs like *Symphony*, by all means get the extra 256K.

The CS 40 (main unit) takes up little desk space: 13.5"W x 14.5"D x 16"H. The keyboard is 16"W x 7.6"D x 1.34"H. Keep in mind when picking it up off a desk that you are lifting around 40 pounds, and that you cannot move the monitor and main unit separately like you usually do.

The keyboard feels better than many clone keyboards. It has a light touch, and the layout is standard. Function keys are across the top. LEDs for Caps Lock, Num Lock and Scroll Lock are in the upper right corner, instead of on the keys themselves. The backspace key is not conveniently located. (Use the CTRL + H instead for easy error correction).

What about *Electric Desk*? Not a bad name for it, since it is memory resident. You can switch back and forth among the integrated word processor, database, spreadsheet and modem program with ease (for instance, F10 + C moves you to the communications mode).

These programs are not top-of-the-line, but are definitely not public domain stuff either. The *Electric Desk* tutorial is optional via mail for $5; the new user could find it helpful. Otherwise, the manual and onscreen help files will familiarize you with all the features..

It is *very* important to follow the instructions for installation and configuration carefully, or it will not work properly. The disks are not copy protected, so you should make backups before you do anything with them.

The database and spreadsheet seem adequate for most needs. Using your modem with *Electric Desk* causes no pains, except for writing log-on macros. These are tricky, and unless you have some experience in this area, you might want to just dial manually. I got my MCI Mail number macro working after a struggle.

Both ASCII and XMODEM send/receive are supported. It's easy to upload a file after writing it in the word processor.

Writing is done in the Document Service. You can write up to 1000 lines without saving to disk, which is a *lot* of writing for a session. This is a basic vanilla word processor, but with nice features. Document Service has italics, bold, superscripts, subscripts, underline and other text types; these are indicated onscreen according to how you set this in the configuration. Italics might be shown in inverse, or simply in a different shade.

You can fix transposed letters like "incredibel" to "incredible" with the Ctrl + T. All caps/lower case can be done with Ctrl + C/Ctrl + L. Block moves and deletions are made easily, since they are held in memory, not on disk (unless you wish to save them).

Margin settings default to 5 and 75 each time you begin writing. These are *not* standard, and must be changed each time. Why those settings were chosen is a mystery. You can define a memory key (such a Alt + 1) to change margins, however, or store phrases (up to 1,000 keystrokes). These are real timesavers in typing your name and address in a letter.

Files are saved with the extension .DOC added to them (unless you use "Export" to save as a pure ASCII file, in which case it uses the .TEX extension). When you use the pop-up directory window, other files on your disk like ARTICLE.TXT or LETTERS.MOM) do not appear in the directory.

In such cases, you can select "Access DOS" and read your true directory. It slows you down though. Cursor commands in Document Service could also be improved: you must type End End -› to go to the end of a line.

Embedded formatting commands are also supported, to number pages automatically, create headers/footers, include a date or select compressed print from your printer, among other choices.

Cordata has put together an admirable package of software/hardware in the CS 40. It isn't "premium quality" but it's a fine clone worthy of your consideration. □

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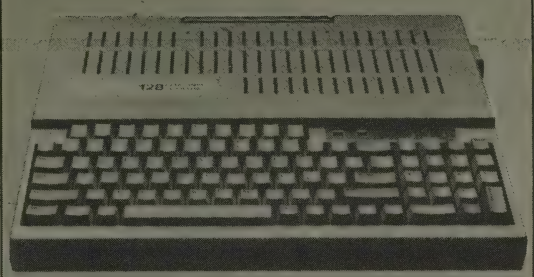

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# September, 1752 And Other Temporal Concerns

By Bennett Falk

"Cal" is a UNIX utility that prints out a calendar for any specified month or year. It could hardly be easier to use; simply type "cal 1988" to see a complete 1988 calendar. To get a calendar for a specific month in 1988, simply insert the number of the month: "cal 11 1988," for example, would produce a calendar for November of 1988.

The most common pitfall in using "cal" is failing to specify the year by all its digits. The command "cal 88" is legal, but prints out the calendar for 88 A.D. and not for 1988. "cal" will produce calendars for any year from 1 to 9999.

Of course it's great fun printing calendars for interesting historical years, and sooner or later one gets around to printing the calendar for 1752. That year's calendar looks perfectly normal except for the month of September, which is missing 11 days and looks like this:

September 1752

| S | M | Tu | W | Th | F | S |
|---|---|---|---|---|---|---|
| | 1 | 2 | 14 | 15 | 16 | |
| 17 | 18 | 19 | 20 | 21 | 22 | 23 |
| 24 | 25 | 26 | 27 | 28 | 29 | 30 |

The thoughtful user will immediately check the manual entry for cal looking for an admission of some bug in the algorithm that produces the calendars, but the manual says only: "The calendar produced is that for England and her colonies. Try September 1752."

## The Gregorian Calendar Meets The Church Of England

At this point it may be helpful to supplement the UNIX Manual with a few pieces of general knowledge. The calendar used in Europe and the Western Hemisphere is basically the Gregorian calendar, promulgated by Pope Gregory the XIIIth in 1582 to replace the Julian calendar, which, at the time, had become ten days out of phase with the relative position of the earth and sun. The distinguishing feature of the Gregorian calendar is its special handling of centenary years: only those centenary years evenly divisible by 400 are treated as leap years. Other centenary years have only 365 days.

In 1582 the need for calendar reform was overshadowed by religious antagonisms. As a Protestant nation, England was determined to have no truck with any time management system proposed by the papacy of the Roman Catholic church.

For one reason or another, therefore, England persevered with the Julian calendar until September of 1752, and once a UNIX user knows what to look for, it's easy enough to identify the Julian dating of the cal command's output for years prior to 1752. "cal 1700," for example, does indeed show that February contained a leap day that is absent from the Gregorian calendar of that year.

*Copyright © 1988 by Bennett Falk. Bennett Falk lives in the Bay Area and works for Sybase, Inc. He writes whenever he can and hopes for the best.*

## The Pitfalls Of Time Measurement

The point of this exercise is that time measurement may not be as straightforward as one would like: inevitably there are local, historical quirks to interfere with the orderly numbering of the passing seconds. The "cal" command illustrates this, but nothing of great importance depends upon its accuracy. It is, after all, just a utility to provide calendar information.

However, in addition to the cal command, UNIX includes a clock to report the time of day, and a very great deal depends on its accuracy. The time of day clock provides timing information for automatic command execution, for file aging, for network synchronization, and for some aspects of system accounting.

UNIX maintains this clock as a counter of fixed size in memory, and each time the system is booted, the counter is initialized from information provided by an independent hardware clock or by the person starting the system. The clock records time as the number of seconds that have elapsed since a fixed point in the past. On all UNIX systems this fixed point, known variously as The Epoch or The Beginning of Time, is January 1,19709 00:00:00 GMT (Greenwich Mean Time).

Because the space allocated for this time of day clock is only four bytes (the size of a "long" integer in the C language), the UNIX clock can't count beyond 2,147,483,647 seconds (the largest signed number that can be represented in four bytes). Translating this into English, the "End of Time" as measured by present UNIX systems is Jan 18, 2038 7:14:07 pm GMT.

Now the idea of a clock with a known expiration date may seem odd at first glance. The UNIX timekeeping apparatus is useless for dates falling outside the 68 years enumerated by the UNIX clock, and application programmers (database manufacturers in particular) have been faced with the need to fabricate alternate methods of representing date/time information within applications.

Of course, things are not as bad as they might be. At least UNIX keeps time in a format that enables the programmer to compare dates and to derive true calendar intervals from these comparisons.

An important feature of the UNIX clock is that it measures time independently of local conventions. The system's count of elapsed seconds is always in relation to Greenwich Mean Time rather than to local time. Because the native time format on all UNIX machines is based on GMT, it is, in principle, relatively easy to synchronize UNIX machines participating in a network.

Ultimately, of course, the time the system knows has to be expressible in a format that is helpful for the system's users, usually the local time of a particular time zone which has its own rules for seasonal variations like daylight savings time.

In addition to its counter of elapsed time, the UNIX kernel also stores information about the local time zone and the appropriate conversion for daylight saving time (DST). The time zone is stored as displacement west of Greenwich (though AT&T UNIX and Berkeley UNIX disagree on whether seconds or minutes should be used to measure this displacement). The flag designating what type of correction will be used for daylight saving time currently recognizes at least 11 different values representing various forms of DST conversion practiced throughout the world.

Whenever the beginning or ending dates of daylight savings time are changed, the presence in the kernel of constants for local time conversions becomes controversial. Hysterical voices can be heard to cry, "Do we have to reconfigure the kernel just to get accurate conversions to local time?"

Reconfiguring the kernel is, of course, not something to be undertaken lightly. However, if the problem of keeping accurate local time is to be cause for any sort of hue and cry, the alarm should at least be of the enlightened sort.

To begin with, the conversion of Greenwich Mean Time to local time is not done in the kernel itself. Indeed, the information about local time stored in the kernel does not include anything to determine if daylight saving time is actually in effect.

The business of translating from GMT to local time is done by a group of time conversion functions in the C standard library (see, for example, the manual entry for "ctime"). These functions use the information provided by the kernel and compensate for other quirks in time conversion. Utilities such as "date" are built from these functions.

From a programmer's perspective this arrangement of things is optimal. The kernel stores a minimum of information, and the actual computation of local time is done outside the kernel in specific programs or functions that have access to both the kernel's information and a host of timekeeping trivia best left out of the operating system.

From the eternally hapless user's perspective, it may not make much difference where translation to local time is done: getting a vendor to provide updated C libraries or utilities that have been recompiled with updated libraries can be at least as difficult as reconfiguring the kernel. Of course, when satisfaction is impossible, it is nevertheless important to be dissatisfied for the right reason. □

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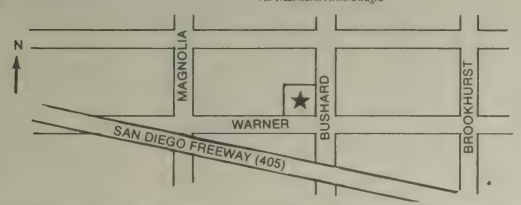

# Throwing The First Ropes Across The Chasm:

## *Networking Macs And PCs*

By Robert Beauchamp

The aim of this new column is to bring to light various ways to bridge the gulf that lies between the MS-DOS world of the PC and the world of the Macintosh. It's a sometimes-perilous task — there are many paths which may be taken, some of them promising, none perfect.

At the end of each path is a bridge that offers itself as the solution to the Mac to PC connectivity problem. Whether that bridge is the best solution and whether it will remain the best solution in the future are questions this column will attempt to answer.

### PC And Macs: Why Connect?

If you were to go into a computer store that was both an authorized Apple and IBM dealer (good luck), and had lots of money to spend (more good luck), they could set you up with a pretty nice networked system that would let you take advantage of the best features of these two incompatible machines. You could take your Mac IIs, SEs, IBM PS/2s and new Apple LaserWriter back to the office and have a field day.

Chances are, however, that your interest in connecting Macintoshes to PCs has less to do with an inspired grand design than simple necessity. Macintoshes seem to have a way of sneaking into offices of key people, who then want to connect up with the rest of the company. MS-DOS machines, due to their expandibility and compatibility with a vast installed base, never seem to lose their functionality. There's no point in throwing away an old PC when you can inexpensively upgrade it.

People who take their work home with them face the same problem. They may have just purchased a snazzy PS/2 and their office goes Macintosh a month later. Or a person might have had a Mac at home but needed to buy a PC to be compatible with the workplace.

Regardless of the specific problem, Mac-to-PC connectivity has become a major issue. John Sculley has even gone so far as to say that Apple's future depends on connectivity.

We have assembled a test system which we feel will present issues that are fairly typical of those found in the average home or office. It consists of an Apple Macintosh Plus with a 60 MB hard drive and a Club AT 286 PC clone with a 20 MB hard drive, NEC Multisync monitor, EGA card and Microsoft Bus Mouse.

The next step is to throw the first rope across the chasm and connect these two machines with a network. To do this we'll employ the TOPS networking system from Sun Microsystems.

**One of the major advantages of TOPS is that it lets you share files on a network while still maintaining the individual integrity of each PC on the network. Each node can act as both a client or a server.**

### The First Rope: Installing A Network

TOPS is an excellent choice for networking Macs and PCs together as it is specifically designed for that purpose. With TOPS you can also network with Sun workstations. The goal of TOPS is to allow you to access files stored on an incompatible machine. This way you can take a document that has been produced in a word processor on a PC and put it into your page makeup program on a Mac. Conversely, spreadsheet files produced on a Mac can easily be transferred to the PC.

There are two major components to a network. One is the hardware that physically connects the computers, and the other is the software that runs the network. Connecting Macintoshes to a network is relatively easy because Apple included all the networking hardware inside the Mac. All you need to do is connect the Macs together through their printer ports using AppleTalk connectors and cables.

IBM compatibles and clones, however, require a special card that allows them to run on a network with Macintoshes. The TOPS FlashCard is an example of such a card.

Installation of the FlashCard will be the most difficult part of setting up a network. If you have other cards in one or more of your computer's eight expansion slots, you may have to reconfigure your other expansion cards or the FlashCard due to conflicts in the DMA, IRQ and I/O address settings. There is a whole section in the FlashCard documentation that tells you about known conflicts the FlashCard will have with other expansion boards.

For example, if you have a Microsoft Mouse Card on your PC AT, as we do, the FlashCard documentation points out that the interrupt jumper on the Mouse Card must be set to use IRQ 5. In order to do this, you must take the mouse card out of the machine, check the manual, and determine which jumper on the card is for the IRQ setting. You then set the jumper as prescribed. Since the mouse card documentation is clear this should not be a problem.

On the other hand, if you have a PC, PC XT or compatible, the FlashCard documentation tells you to change the jumper on the FlashCard to use interrupt 3.

If you're having problems, there is also a section of the manual on troubleshooting. This section offers several helpful suggestions and, as a last resort, the number of TOPS technical support.

After you have installed the FlashCard into an expansion slot and configured the other cards, you will have to install the FlashCard driver. The driver is software that allows MS-DOS application programs to make system calls to send data out over the network. In order for your PC to interface with the network you need to install this driver.

Installing the driver involves two steps. The first is to copy the file ATALK.SYS, provided with the FlashCard, onto the root directory of the boot disk. The second is to add a line to the CONFIG.SYS file on your boot disk.

All those out there who could add a line to their CONFIG.SYS file, without looking at their DOS manual raise their hands....At this point the documentation truly fails the user. The documentation tells you that you must do these tasks, but it does not tell you how to accomplish them. While anyone with a rudimentary knowledge of DOS will be able to copy a file onto a root directory, not nearly as many people will as easily be able to add a line to their CONFIG.SYS file.

For those who didn't raise their hands, here are the few lines you need to know to add the correct line to your CONFIG.SYS file. The DOS utility you'll be using is called EDLIN.

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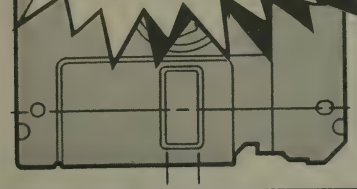

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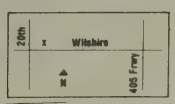


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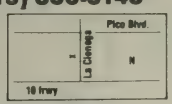


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At the DOS prompt of your root directory type:
**EDLIN CONFIG.SYS**
Your screen will then look like this:
**End of Input File**
*

At the asterisk,which is the EDLIN prompt, type:

**I** and press **Return**

This invokes the Insert Line command. Your screen will then show **1:***

At this point you can insert the line that FlashCard requires. At the EDLIN prompt type:

**DEVICE = ATALK.SYS** then press **Return**

Depending on the configuration of your FlashCard, you may also have to add an option to the end of the line. These options are listed in the FlashCard manual.

At the EDLIN prompt press **F6** and press **Return;** this will exit you from the Insert Line command. At the next EDLIN prompt type:

**E** and press **Return**

This saves your edits and returns you to the DOS prompt. If you made a mistake and don't want to save your edits type **Q** (for QUIT) and press **Return.** You will be asked if you want to abort the edit. Type **Y** and press **Return.** This will put you at the DOS prompt without saving your edits. It's a simple enough procedure if you know how, and should have been included in the documentation.

## Installing PhoneNET

On the back of the FlashCard is a DB-8 connector plug. The DB-8 connector is the standard connector for networks with Macintoshes on them. It is also known as an AppleTalk connector plug. To connect the Macintosh and PC, you plug an AppleTalk connector into the printer port on the Mac and the DB-8 plug on the FlashCard.

**There are two major components to a network: the hardware that physically connects the computers, and the software that runs the network. Connecting Macintoshes to a network is relatively easy because Apple included all the networking hardware inside the Mac.**

The PhoneNET system from Farallon Computing (415/849-2331) includes these connectors and sections of standard phone wire. You can get PhoneNET under a different name directly from TOPS. Each connector on the Farallon system includes two standard phone jacks. You connect the computers on the system by daisy-chaining them together with the phone wire. PhoneNET offers a variety of network configurations. Due to its low cost per node, it especially useful for small networks.

## TOPS Software

If installing a TOPS FlashCard is the Mr. Hyde of networking, installing TOPS software is the Dr. Jekyll. Installation instructions are clear and take little time to implement.

One of the major advantages of TOPS is that it lets you share files on a network while still maintaining the individual integrity of each PC on the network. Each node can act as both a client or a server. As a server you choose those files you wish to make available to the other computers on the network. As a client you choose among those files on the network.

There are separate software packages for each type of computer on your network. TOPS is available for Macintosh, IBM PCs, XTs, ATs and compatibles and Sun workstations. TOPS requires you to purchase a software package for each node on the network.

It's definitely worth your while to try to install a network by yourself. Mastering your computers is one of the best examples of "learn by doing." If you don't wish to take the self-improvement route, however, you might consider having a professional computer service person install your TOPS hardware. The service person will then be able to give you a complete report on the settings of your expansion boards, making future add-ons easier.

Now that you have thrown the first ropes across the chasm and are on your way to bridging the gulf between Macs and PCs you can start to explore the many features of TOPS. In next month's column we'll explore some of these features, and also delve into file transfers between Microsoft's *Word* and *Excel* programs. (TOPS, 415/549-4900) □

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# Twenty Minutes Into The Future

## *The Nose Of The Camel Is In The Tent*

**By Brock N. Meeks**

The Max Headroom television show portrayed a stark view of the world "Twenty minutes into the future." Max was right on concerning many issues confronting users of telecommunications. He was more than "dialed in," he was, quite literally, *online*. There was much to be learned reading between Max's s-s-s-stuttering quips. But did we look hard enough? I don't think so.

One of Max's favorite targets were the "networks," those all-powerful purveyors of both programming and politics. In one particularly stunning line Max proclaimed, "The Networks are the government." He wasn't kidding.

For Max, "life, love, and the pursuit of happiness" were melded to a computerized high-tech world (in which telecommunications were simply a given). To distinguish between the two was tantamount to sacrilege. It was (is?) a world where First Amendment rights were the exclusive prerogative of network (government) programmers. After all, in the world of Max Headroom, the television had no on/off switch. In other words, "When on/off switches are outlawed, only outlaws will have on/off switches." And they were.

Only futuristic drama you say? Not so fast.

On January 31 of this year the Office of Technological Assessment (OTA) issued a stunning report looking at the meaning and scope of the First Amendment to the Constitution on freedom of speech and the press as related to science and technology. Rep. Robert Kastenmeier (D-Wis.), Chairman of the House Judiciary subcommittee on Civil Rights, whose committee requested the study, said that the report makes it clear that the challenge of the nation's third century will be to "fuse the basic rights of free speech and a free press with a wide range of rapidly developing technologies which elude traditional definitions and means of protection."

### Width And Breadth

I sat in on the dog and pony show the OTA tried to call a "panel discussion" that eventually led to this report. It was titled: The Future of the Press and the First Amendment. Impressive topic, unimpressive responses.

A blue-rinsed matron sat before a panel of three-piece suits and law degrees and tried to understand "the medium"; the world of "computer mediated discourse" was lost among the pretensions of Washington politicos.

Out of that panel discussion, the OTA hammered the report they issued on January 31. The upshot: that these new technological developments in broadcast and electronic media will force a redefinition of First Amendment guarantees of free speech and a free press. At least they got that right.

My first dismal impressions were wrong. Somebody at the OTA did their homework. The folks in Washington, though they don't understand the full implications of these technologies, understand that a debate is emerging over how to strike a "delicate balance" between individual rights of free expression and the national interest.

The OTA report says that satellites, computers, electronic bulletin boards, telex, videotext, and other new ways of gathering, editing, and delivering news are blurring legal and regulatory distinctions between common carriers and the press. This changes arguments about the constitutional rights that each enjoys. As these technologies overlap and intertwine, the OTA report says, so do the set of rules most appropriate for the hybrid media of the future.

The report goes on to hit where most of us live (online): electronic bulletin boards. The meaning of a "free press" should expand to accommodate these new forums of "free speech" that are continuing to challenge the traditional concepts of personal privacy, editorial responsibility and media liability. The report says of BBSes that they can be considered "many-to-many" *news channels* (my emphasis), where no identifiable publisher can be held accountable for content as is the case with traditional print or broadcast media.

What does all this mean for you and me? The report spells it out in a chilling sentence: "[T]he First Amendment will have to be reinterpreted in response to almost certain challenges of the government's right to regulate access to the media and ownership of new media outlets."

The key phrase there is "almost certain challenges of the government's right to regulate access." You've read about this right here in this column; the nose of the camel is in the tent. Need more evidence? Read on.

### Commies At Our Doors

The report says the government also will be concerned about use of the new forms of media for the involuntary transfer of sensitive technology to potentially hostile nations. Some officials believe new restraints might be necessary to protect technological information; others say freedom of speech and of the press may already have been compromised, the report said.

This all comes about when the discussion of information flow centers on the scientific community and the free flow of information within that community. The report fully acknowledges that the freedom of speech and the press is constrained by national security and other restrictions (trade and export, for example). The concept of national security has been broadened beyond protection of weapons systems to include protection of technological innovations and industrial competitiveness.

Boiled down, that means national security has extend to, simply, information. And more and more that means information stored online, reachable via some online database.

Is this beginning to sound like information age rhetoric to you? If you'll remember, this column addressed the now infamous "Poindexter directive" that brought this situation to light. Although the Poindexter directive was indeed rescinded, that was only a symptom of a more insidious thread: National Security Decision Directive (NSDD) 145. This document (which is still in effect) created a new security classification called "sensitive but unclassified." It stems from the government's paranoia that, somehow, computerized information systems are an open invitation to "hostile" nations to rape and pillage our most cherished technological advancements.

Although White House chief of staff Howard Baker promised to have NSDD 145 reviewed, he didn't give any specific time frame for the review to take place. And with Irangate, the Persian Gulf, and a budget-busting deficit dogging the current Administration, it's unlikely that NSDD 145 will get any kind of top priority.

### Freedom Of Electronic Speech

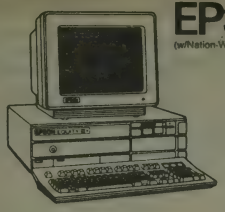
Basic rights of free speech are not absolute. The Supreme Court will, when pushed, balance the rights of the citizenry to express themselves freely against "national security" interests of the State. And those "interests" don't stop at the munitions factory door. They extend to inventions, technological research, university research funded by the Department of Defense, and scientific data, too.

The report concludes that free speech and a free press are among the most fundamental and essential conditions for preserving democratic government; the Supreme Court has accorded them a preferred position in any conflict. However, as pointed out above, that position is anything but a given.

Clearly the Congress has an essential role in preserving some kind of balance. The question remains, however, just how much of a balance can be reached? Perhaps "compromise" is a word better used. But compromise scares me.

It's clear that the OTA sees forums such as BBSes and The WELL as "news" media, and, by

*Copyright © 1988 by Brock N. Meeks.* *Brock Meeks is a San Diego-based author and columnist; he was last seen twenty minutes into the future — driving a '72 Volvo.*



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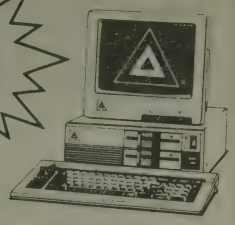

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extension, so will the courts. Will sysops, then, be responsible for the content in their newly appointed roles as "publishers" and therefore open to scads of governmental regulation? (The spectre of the FCC looms once again.) Moreover, because these electronic forums (which I once innocently referred to as "electronic soapboxes") are considered, by the OTA, as two-way publishing media, each of you who contributes to an electronic forum might be held liable for any and all comments you enter, up to and including the *validity* of those comments. One typo and...well, you get the picture.

And, if this report is correct, it is the State that will step in and see to it that some kind of regulation is indeed, placed on what we can say, how we say it, and where the responsibility for it lies.

The report ends with the recommendation that Congress provide a formulation of public policy and that these new forms of media be controlled by the oversight of executive agencies. (The Office of Bulletin Board Systems, perhaps?)

### The Electronic Edge

To date, there is no legislation, either at the federal or state level, which even attempts to define or protect what we say online. And if federal legislative tradition continues, it will take the efforts of state legislatures to prod the Washington bureaucracy into action. This is exactly the pattern that led to Congress finally adopting some kind of formal computer crime legislation.

All is not lost, however. Like the cavalry arriving in some B-grade western, there is a bill in the California legislature which, if it passes committee, will give this nation its first assured "freedom of electronic speech" law.

**To date, there is no legislation, either at the federal or state level, which even attempts to define or protect what we say online. And if federal legislative tradition continues, it will take the efforts of state legislatures to prod the Washington bureaucracy into action.**

The bill (ACA-36) is sponsored by Assemblywoman Gwen Moore (D-LA). It's billed as an "information age 'Bill of Rights.'" According to Bob Jacobson, principal consultant to the Assembly Utilities & Commerce committee: "ACA 36 was voted on for the first time in April 1987 by the Assembly Utilities and Commerce Committee, where it passed on a bipartisan 11-0 vote. However, in August 1987, the Assembly Elections, Reapportionment, and Constitutional Amendments Committee defeated ACA 36 on a 4-3 vote, with the three Republican members present all voting 'no.' The Assembly Elections Committee, on appeal by Assemblywoman Moore, rescheduled the bill for a January 1988 rehearing."

The bill is languishing in committee, despite virtually no opposition. Here's the legislative digest:

"The California Constitution guarantees the freedom to speak, write, and publish on all subjects and prohibits abridgement of the liberty of speech or press.

"This measure would guarantee the right to electronically communicate on all subjects and would provide that a law may not restrain or abridge liberty of electronic communications.

"The California Constitution also guarantees the right of the people to be secure in their persons, houses, papers, and effects against unreasonable seizures and searches. A warrant may not issue unless it particularly describes the place to be searched.

"This measure would specify that personal information stored in electronic information systems and computer databases is included in the search and seizure guarantees."

Later this month ACA-36 will be voted on again. Don't let the opportunity to make your voice heard slip away; don't let the "twenty minutes into the future" scenario detailed by Max Headroom and foreshadowed by the OTA report become a reality.

To act on ACA-36 write to:

Assembly Elections Committee at the State Capitol, Room 5119, P.O. Box 942849, Sacramento, CA 94249-0001.

**Peter R. Chacon,** Chairman (D-San Diego)

**Richard L. Mountjoy,** Vice-Chairman, (R-Arcadia)

And for a look at "what might be," the OTA report is available for $3.50 from the Government Printing Office, stock number 052-003-01090-9. □


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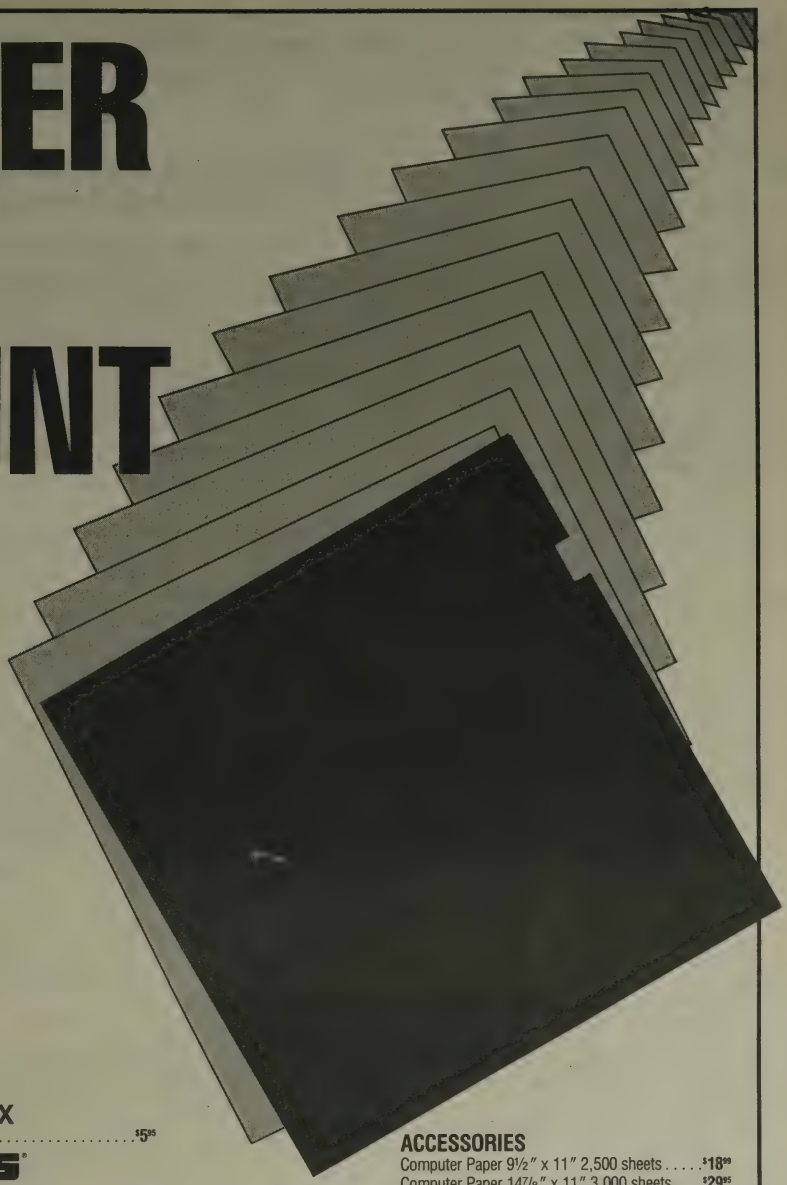

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# AMIGA

# Bon AmiEXPO

**By Matthew Leeds**

The show circuit is finally winding down. I've attended a half dozen in the last three months, and at last there are no new shows in sight. Sure the West Coast Computer Faire is coming, as is the NCGA show, Video Expo, SIGGRAPH, and assorted other events, but there are no Amiga specific shows in the next couple of months, and I can take a break.

I just returned from the Los Angeles AmiEXPO at the Bonaventure Hotel. The AmiEXPO people have finally gotten most of the kinks out of their show production, and this event was handled very well. I was a little concerned by the high price for admission ($20 for one day, $30 for all three days), but the crowds did not seem to mind.

## New Products

After so many shows in such a short period of time, you'd think it would be impossible to find any new product unveilings. This, however, turned out not to be the case.

CSA introduced the first 68030 board for the Amiga. This makes the Amiga the first computer for general use with a 68030 option. The '030 provides on-board memory management, support for the 68882 math co-processor, clock speeds in excess of 20MHz, 256 byte instruction and data caches, and a four gigabyte address range. To supplement this powerhouse, CSA also introduced a 32MB 32 bit dynamic RAM board and an 800MB WORM optical disk drive. We are talking very serious computing here.

At a slightly lower price, Inner Connections, Inc. showed a 20MB Bernoulli drive with SCSI controller. The Bernoulli drive uses a removable cartridge medium, with each cartridge costing around $100. Although the initial price of a system ($1795) is higher than a fixed disk system, the interchangeability of the cartridges adds flexibility. Additionally, Bernoulli drives are virtually immune to head crashes, and have a faster average access time than many fixed disk drives.

Progressive Peripherals and Software, while not an exhibitor on the floor of the show, did have a press suite where they showed several new products. The most exciting to me was a real time frame grabber. This external box works with any Amiga, and captures images in black and white or color in 1/30 of a second. The image is stored in RAM inside the frame grabber, and then passed to the Amiga via the parallel port. Overscan is supported in low res mode. The impressive thing about the frame grabber was the quality of the image it produced.

Also shown by PP&S was the long-awaited *Superbase Professional* programmable relational database. This looks to be one of the hot applications for the Amiga, marred only by the continued use of a dongle for theft protection.

New Horizons Software previewed an upgrade to *ProWrite*. Details were sketchy, but expect great things soon.

R & DL Productions has created a driver that lets you use SummaGraphics graphic tablets with the Amiga. Tablets come in three sizes: 6x9, 12x12, and 12x18. The SummaGraphics tablets have the advantage of not requiring pressure on their surface to activate the cursor. This lets you have a lighter hand while using them. The tablets are bundled with the driver.

Seymor-Radix has created a Thunderscan-like image scanner for the Amiga. This device attaches to your printer next to the print head and will scan any image that can be fed through your printer's paper feed system. The IMG-SCAN will capture up to 256 gray scale resolution.

The long awaited entry of Dr. T's into the Amiga music software community has finally occurred with the release of several programs. The Keyboard Controlled Sequencer V1.6 brings automated 48-track recording to the Amiga. Real time quantizing, punch-in and punch-out, variations generator, synchronization via MIDI clock or MIDI song position pointer, and compatibility with any Amiga MIDI interface are just a few of its features. Also introduced were *The Copyist*, a transcription and scoring package with PostScript and preferences printer capability, Roland MT-32 editor/librarian, and Roland D-50 editor/librarian.

*Snip*, from Digital Dynamics, is a digital signal processing program that offers 32 bit floating point math applied to analyzing signals from a wide range of instrumentation. Various processes may be applied to captured data, including integrating, differentiating, averaging, rectifying, and smoothing.

NewTek announced a new version of *Digi-Paint*. New features include three-dimensional image mapping of brushes to shapes; brush rotation, sizing, and perspective control; overscan; super bit maps to 1024 x1024; anti-aliased fonts; multiple swap screens limited only by amount of expansion RAM; half-brite support; and a direct interface to *Digi-View*.

## Good News For Third-Party Developers

Commodore announced a developers' conference to be held in late April in Washington D.C. This will be a three-day event consisting of seminars on programming, product development, marketing information and new products. The sessions will be led by Commodore personnel and qualified third-party speakers. If you are interested in more details you can write to Commodore for information: CATS-Developer's Conference, 1200 Wilson Drive, West Chester, PA 19380.

An interesting development during the show was the formation of an Amiga Developers Steering Committee. This evolved out of several events and needs. Commodore is working on a new version of the operating system Kickstart/Workbench 1.3. As news of this reached the third-party developers, each developer began to attempt to get information on the direction Commodore was taking on 1.3, and what new features would be added. Since Commodore was not directly making information available, each developer would call their contacts inside Commodore for information (every good developer cultivates inside contacts, just like journalists).

Eventually this led to a major disruption in the development schedule of 1.3, since most of the inside contacts were the same people directly responsible for doing the work on 1.3. While they were on the phone they couldn't be working.

A side effect of this was that as each third-party developer discovered what Commodore was adding to KS/WB 1.3 they had suggestions, comments, complaints, etc. Finally Commodore had to find some way to take control of the situation. An official channel of communication is being created for feedback on the direction of future development on the Amiga. Standing committees will be set up to advise Commodore on such things as changes to the graphics libraries, support for multiple serial devices, extended resolution displays, graphic co-processors, and other areas of interest.

The important thing to note is that this marks a change in Commodore's perception of its third party developers. They are no longer an outside force to either be put up with or ignored, they are now a vital part of the future of the Amiga. □

## RESOURCES

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*Matthew Leeds has been involved in the high tech field since he blew up his bedroom playing with a children's chemistry kit. He has been using Commodore computers since 1982 and has a strong interest in photography, video, graphics and related fields. He currently works for Infinity Software.*

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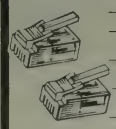

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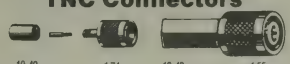

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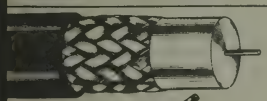

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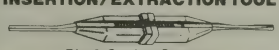

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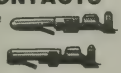

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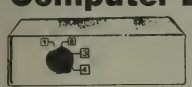

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# APPLE, TOO

## *Is The Apple II Doomed?*

**By Mike Markowitz**

Sooner or later, every technology reaches the end of its marketability, no matter how useful and effective it may remain. This happened to the longbow, the slide rule, and even the Volkswagen Beetle. Painful as it may be to contemplate, it is also about to happen to the 6502 microprocessor, which is the 8-bit, 1 megahertz engine of the classic Apple II.

An installed base of four million has a certain inertia, especially when a large portion of that installed base resides in schools. People who use Apple IIs tend to regard them with the sort of affection usually reserved for good-natured pets, or reliable cars. Increasingly, that affection is tinged with defensiveness, as our friends show off their Mac IIs, Toshiba laptops and '386 Turbo-Tyrannosaurs.

Grownups understand that a time comes when even the best-loved pet has to be put to sleep. That time may be at hand for the ten-year old technology of the Apple II. After all, in dog years, that's over 70. In computer years, it's more like a millennium.

It doesn't help that Apple IIs are also overpriced. People who should be buying Apples are buying no-name PC-XT clones and condemning their families to the MS-DOS Hell of incompatibility and obsolescence. Why? Because you can get a turbo-clone with a hard disk ("Look Martha, it's just like the one Mommy uses at work.") for about half the price of a new IIe without one.

The classic Apple II is slow. Its native language is AppleSoft, a feeble antique dialect of BASIC (some programmers call it AppleSloth). It can't directly address more than 128K of memory. It has limited graphic resolution, and can't handle more than 16 colors. It practically needs another computer to manage I/O for a hard disk, which makes for very expensive mass storage.

These limitations have been overcome for many years by the creativity, daring and persistence of a remarkable community of programmers, developers, engineers and hackers. But we have now arrived at the point of diminishing returns. If you don't believe it, look at the current crop of Apple II software and peripherals, and compare them to what is produced for the major leagues of MS-DOS and Macintosh. Right now, most new games published for the 8-bit Apple II are conversions of titles for the Commodore 64, with inferior sound and graphics. Serious gamers buy an Atari ST or an Amiga.

When IBM realized that the PC-XT/AT standard had reached a technological Dead End, it pulled the plug on a profitable and popular product line. Some of the PS/2 replacement machines may be kludgy, but the commitment to new technology is clear (better graphics, 3.5" disks, the Micro Channel bus, multi-tasking, etc.).

*Mike Markowitz is a computer engineer for a large Southern California aerospace firm. He has been writing about Apple II hardware and software since 1984.* *Copyright © 1988 by Mike Markowitz.*

**People who should be buying Apples are buying no-name PC-XT clones and condemning their families to the MS-DOS hell of incompatibility and obsolescence. Why? Because you can get a turbo-clone with a hard disk for about half the price of a new IIe without one.**

If the Apple II idea has any future, then surely it lies with the IIGS architecture, which provides ample room for growth. The more you learn about the IIGS, the more you realize it isn't an evolutionary dead end (like the poor Apple III), but rather the gateway to new possibilities. To realize those possibilities, however, Apple will have to take some risks and make some smart moves.

As Kenny Rogers reminds us, *every gambler knows that the secret to survival is knowing what to throw away and knowing what to keep.* I think the first move would be to terminate production and marketing of the IIe and IIc. That would send a clear message that "Apple II forever" means Sixteen Bits. As long as you can walk into your Apple dealer's store and walk out with a new 8-bit system, the developers will go on publishing klutzy, crippled software for it, and the IIGS market will be stifled.

I realize that many users will regard this as a proposal to do away with Classic Coke. Apple may view it as a proposal to kill The Cow That Gives Cash. This author recognizes his obligation to air responsible opposing viewpoints. Write and tell me if you think I'm crazy.

A viable product line needs a clearly defined low end, mid-range and high end. To put it simply, the present IIGS needs a little brother, and a Big Sister.

If a true laptop portable isn't feasible yet, the little brother could be similar to the present IIc, maybe a little wider to accommodate the numeric keypad. Without the need for slots, or an internal power supply, it could be mass-produced cheaply enough to be a true VolksKomputer. The built-in 3.5" drive would be the most expensive component. The 140K, 5.25" floppy disk is a terrible medium for software, especially for schools. It's fragile, bulky and gives little room for graphics. The sooner we bid it goodbye, the better.

Apple's top management has repeatedly emphasized that the company isn't interested in competing for the low end of the market. On the other hand, they once said that "Kids Can't Wait." The most effective way to use computers in schools is to put one on every desk and in every home. That isn't going to happen with $2000 yuppie-toy systems. The ideal school computer is a one-piece armored box that can be delivered in quantity for under $500.

We've described what an entry-level system might look like, but what about the top of the line? For the sake of argument, call it the GS Plus.

Every IIGS user will agree that the key to the future survival of this system is more speed. At the present 2.8 MHz clock rate, programs are slow to load, files are slow to copy or save, searches and recalculations are slow to execute. There are a lot of ways to make a computer work faster—boosting the clock rate, adding a math co-processor, and various data-caching schemes. The next GS had better be at least twice as fast, with an upgrade path for present GS owners.

Right behind acceleration on the wish list comes mass storage. Until erasable laser optical media become affordable (some time in the late 1990s?) that means an internal hard disk. Adventure games for the GS are already starting to take up two 800K disks. *WordPerfect 2.0*, with its Dictionary/Thesaurus, takes three disks. Most GS owners could only afford one 3.5" drive. If the top case of the IIGS were redesigned, there would be room for an internal hard disk. Let it be a small personal hard disk, so no one could even imagine that the system is a possible substitute for a Macintosh business machine. The case needs to be redesigned anyhow, because it is too hard to open without breaking a fingernail. Don't Apple engineers *have* fingernails?

Then there is the matter of the missing pixels.

All around the edge of the IIGS screen is a half-inch border of dead space. I guess it's there to make the screen aspect ratio come out right for compatibility with 8-bit graphics. You can have it any color you like, but you can't do anything with it. It is too much to hope for a future video mode that will use *all* the display capability of the monitor? The GS super-high resolution video modes are 320 × 200 and 640 × 200. Two hundred horizontal lines isn't enough for excellent graphics. The Macintosh has 342 (480 on the Mac II with Apple's monitor and video card).

I'm not going to ask for a built-in SCSI port. I'm not going to ask for a built-in MIDI interface. I'm not even going to ask for a megabyte of fast RAM on the motherboard. I'm certainly not going to ask for a 68020 co-processor board with Macintosh ROMs. Not yet anyway. Apple's two families may be destined to converge somewhere down the road, but until then, they need to pursue separate kinds of excellence. The history of the Apple II should not end ignominiously, as a cash cow being milked to fund Macintosh R & D, or as a toy Mac with trainer wheels, confined to an educational ghetto. Macs are "Wheels for The Mind," but Apple IIs should be wings. □

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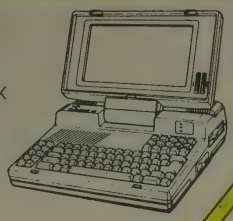

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# On And ON!

By Robert D. Athey Jr.

A few months ago, we discussed the ON! computer. We particularly liked the 2MB RAMdisk device with the special design emphasis on protection of the power supply, which, you may remember, is never disconnected or turned off, so the ON! is always ready to run whatever program you need. The secret lay in the CPU design with brownout, current spike, and blackout protection. The ON! is built by the ONEAC Corporation, a small company whose main business is surge protection for mainframe computers and for special electronic instruments in labs; it's available for around $2500.

Just after the column about the ON!, I got a call from the company's Illinois facility describing an upgrade. There was a large package arriving with new software, a new bootup ROM, new key caps, and an operating manual (the latter to replace the two typewritten drafts I'd gotten originally). When it arrived, I called two techie friends who had been interested in the ON! to give aid in ROM insertion and keycap replacement. When we read the installation directions, they were so clearly written and so easy to follow, I found I really didn't need these guys, after all. I installed the key caps with the aid of a little screwdriver while Woody McPheeters and Dwight Chew put in the ROM, and they finished before I did.

Installing the keycaps simply required unplugging the keyboard, turning it over on a pillow, and taking out six screws. The top of the keyboard is turned over and the caps needing replacement removed with a little edge pressure from a small screwdriver. A keyboard diagram with a yellow Magic Marker covering the twenty caps to be replaced shows the correct location of the new labeled caps. They popped on in a simple press fit.

The ROM installation was simple, in part, because the design of the CPU makes it so accessible. Naturally, you have to disconnect the power, and make sure the internal battery has its shipping plug in it. Four screws are removed, and the outer cover lifts up off the base. You only have to raise it five inches or so. The whole CPU is tilted over to rest on its side, and the ROM is staring at you from the upper right hand corner. The ROM to be replaced is labeled, and you pull it and just plug in the new ROM labelled ON! 3.6. The instruction set then walks you through the reverse process of opening and powering. It even gives you the boot up instructions, and tells you the sorts of screen information you should see (with a hint to call their customer service line if you have a problem).

The software upgrade brings in a substantial RAM resident background utility. It includes the things you might expect of the background utility — the phone dialer, the calculator, the note pad, etc. But there's more. One set of function key settings is for *NewWord*, which is bundled into the ON! All the block marking, copying, saving and moving commands are on single keys. There is another set of function commands that handle printing commands, including a "Make the following number of copies of the document" command.

One feature of the software provided is the extensive set of utility programs, extended with their recent upgrade. One such program is the file manager, called up from the main system menu by typing in an "M." The file manager will rename, delete, view, print, copy, tag/untag or move files to or from disks or among the user areas within the RAM disk. It is a utility very like *NEWSWEEP*.

The software also includes a modem control program called *IMP.COM*. This public domain program was Irv Hoff's modem program that followed *MDM7*, which I described in a column a few months ago. The name IMP is really his acronym for Improved Modem Program. Most of the features and commands are identical to those in *MDM7*.

There is also a major new feature: a file transfer protocol that will shoot out 1000 bits of information in a burst, whereas the older program's protocols allowed a maximum of only 128 bits per transfer.

While we're discussing modem considerations, there is another feature of the ON! I've never seen any where else: a signal conditioner circuit built into the CPU for the telephone line. You use a telephone connection cord to run into the computer, where there is the "signal smoothing" circuitry, and an outlet where you use another telephone cord to connect to the modem. The modem is operated from the serial cable port of the computer, as is standard with any computer without an internal modem card.

The main system menu software for the ON! is unique. For instance, we can simply type in an "A" and get into the *NewWord* software in document mode. An input "E" instead of the "A" will get you into *NewWord* in correspondence mode (no page numbering already installed in the document mode options, for instance). There's a way to get into the non-document directly from the system menu, as well.

SCREEN SHOT OF MAIN SYSTEM MENU FOR ON! COMPUTER

```
Page 1 —
A 02 NewWord Documents          E 03 NewWord Letters   I
B 04 NewWord Book               F                     J
C 05 Plotting Routine           G                     K
D 06 Perfect Calc               H                     L

A0 - Selection?
- Utilities —                  - Other Menus —

M File Manager                  ? Help System
Q Directory                     X File Maintenance Utilities
; Change Active Folder          Y Disk & System Utilities
S Spelling Checker              2 Page 2
```

Indeed, one could even rig the main system menu to call up *NewWord* for some other "file folder." I've rigged other "folders" for my *PlotPro* scientific plotting routine (from BV Engineering) and *Perfect Calc*, my spreadsheet program. We show the main system menu in the enclosed figure.

But you don't need to use the system menus. If you are comfortable with CP/M's standard "A›" prompt, you can choose to bypass the main system software menu at the opening menu by typing in a "Z" instead of the "›." The "Z" choice is a reminder that you are really operating under the "ZCPR" system modification of standard CP/M. ZCPR is one of the software enhancements of CP/M that make it easier to handle hard disks or RAM disks with multiple user areas. This ZCPR program is available from Echelon Software, which has recently moved from Fremont to South Lake Tahoe.

So, in a household with four computers in it, I find good reasons to use the ON! daily. I keep my business accounts on it, because *Perfect Calc* runs faster and with fewer glitches than it did on the Kaypro II. For a presentation late last year, I even used *Perfect Calc* to do the arduous job of making contour plots. Since the machine is always ready, with no need to find disks with software or templates on them, I can just sit down and bat out a letter in a minute, even including pre-prepared fee schedules and consulting resume with the ".fi" command for *NewWord*. One of these days, I'll install *WordStar* 4 for CP/M on it. The ON! moves with me when I move to my new office next month, and the MS-DOS desktop stays at home. I am a real fan of the ON! □

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**ON! SYSTEMS INC.**
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*Bob Athey has over 20 years of experience working on computers and runs his own company on chemical consulting and contact research. He can be reached through MicroTimes or at (415) 526-3541.* *Copyright © 1988 by Robert D. Athey Jr. All rights reserved.*

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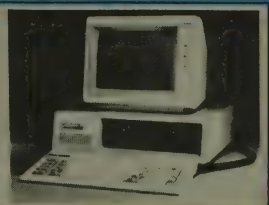

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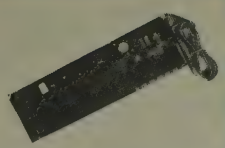

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# Great Games For The ST; Atari Laser Printer Ships

By Helmi Kobler

Way back in my December 1986 column, I ranted and raved about a combat flight simulator called *RPV* from FTL Games (619/453-5711). I swore the game was hot, that it was a "must have," and that it would be available "by the time you read this." As my luck would have it, FTL Games never shipped the product — something about RPV's programmer deciding to go college (what's wrong with kids these days?) I'm still waiting for *RPV*, but in the meantime, I've found FTL's two latest games to be excellent.

The first title is *Dungeon Master* ($39.95), a role-playing game that borrows from the popular Dungeons and Dragons fantasy game. D&D has, of course, influenced hundreds of computer games, but *Dungeon Master* complements the usual series of puzzles with exceptional graphics, sound, and a mouse-based user interface that gives you an interactive sense of being in the dungeon with your party of characters.

You start the game by assembling a party of up to four characters, which you can resurrect from a Hall of Champions or create yourself. Characters can be of a variety of races and classes and are described by characteristics such as strength, intelligence, wisdom, etc.

Once you've assembled your party, you set out to explore up to 14 levels in search of the gem and firestaff which will help you reunite the world, which has been split into good and evil halves. During your journey into the depths of the dungeon, you're bound to cross paths with over 20 monsters and other villains.

I think the nicest part about *Dungeon Master* is that it's more interactive than most role-playing games. If you want to pick up an object, for instance, you don't type "pick up sword," but point at the object with your mouse and drag it to the representation of your character's person. To open a locked door, you drag its key from your character and click on the door's lock.

**The nicest part about Dungeon Master is that it's more interactive than most role-playing games. If you want to pick up an object, for instance, you don't type "pick up sword," but point at the object with your mouse and drag it to your character.**

Almost every aspect of the game is described with graphics or sound. If your character kicks a closed door, you hear the "thud" to accompany the action. If you'd like see the items a character is carrying, the game doesn't present you with a text inventory, but displays a graphic profile of your character, detailed down to type of boots it's wearing.

As well, *Dungeon Master* doesn't use a system of "rounds" or "turns" to control action — everything's in real time. In combat, for instance, blow exchanges do not alternate between your party and the enemy — you may execute any action at any time.

This refreshing approach gives you more of a feeling of "being there," and keeps game play a little more interesting. I'm not a role-playing game lover, but for anyone who enjoys this stuff, *Dungeon Master* should be looked at. If it's not already, it'll soon be the talk of your local BBS, user group or computer dealer.

FTL Games's second title is Oids ($34.95), a shoot-'em-up that borrows from arcade favorites such as *Choplifter*, *Lunar Lander*, *Asteroids*, and others.

*Oids*' premise is not the most original, but it's fine for a senseless action game. Piloting a small space craft, you have to rescue friendly Oids (enslaved mechanical beings) from the hostile Biocrete's planet surface (*Choplifter*) while avoiding a variety of nasty, high-tech weapons such as guided missiles, jets, and saucers. Your ship is triangular, and you maneuver with the joystick by rotating left or right and applying a thruster (*Asteroids*). The surface terrain of the Biocretian planet is jagged and mountainous, providing only a few flat areas where you can land (*Lunar Lander*) and pick up the Oids, which are housed in buildings or roam the surface of the planet. When you've rescued all surviving Oids (some get easily fried by your cannon or an enemy's fire), you move on to a more difficult rescue scenario.

*Oids* includes a game construction set that allows you to customize rescue scenarios. For instance, you can re-draw the planet's surface with a joystick, placing Oids barracks and enemy batteries wherever you please. You can also enable or disable any of the enemy's weapons if you'd rather play without them. Other options let you select unlimited fuel, or shields, or set the strength of the planet's gravity.

*Oids* dresses up an old fashioned shoot-'em-up premise with good graphics and sound. It's not a novel game, but it's exciting to play and you won't have to spend several hours just to scratch its surface.

## Atari SLM804 Laser Printer Arrives

After a six month delay, Atari (408/745-2000) has finally shipped its SLM804 laser printer. Due to Atari's limited production resources, you may not be able to find the laser on every dealer's shelf for a month or so, but it's out there in modest quantities.

Not as sleek as some newer laser printers, the SLM804 weighs in at 50 pounds with width, height and depth dimensions of 20.4," 16.2," and 12.2" respectively. It's based on a 300 dot-per-inch write-white engine which produces bold, solid blacks but tends to smear fine lines in small text sizes or hairlines. The printer has

*Helmi Kobler took his first step into the computer world in 1983 when he walked out of Macy's with an Atari 800 in his arms. Still an Atari user, he's now inseparably attached to his ST. He can be reached through MicroTimes or e-mail <helmi> on The WELL at (415) 332-6106.* *Copyright © 1988 by Helmi Kobler.*

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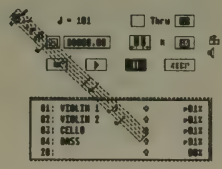

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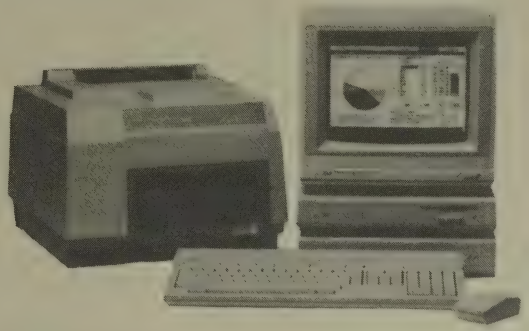

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no onboard microprocessor or RAM, so it uses its host ST's facilities for storing font information or building a bit-map of a page it's printing. You'll need at least two megabytes in your machine to produce pages with multiple fonts or bit-mapped graphics. Since it's best to have as much memory as possible, the SLM804 is being pushed as a peripheral best suited for the Mega2 and Mega4 machines. A 512K machine, however, is adequate for printing pure text in Diablo 630 emulation.

The SLM804 works best with the ST's GDOS standard, which allows the ST to display and print bit-mapped fonts from GEM applications that support GDOS. Popular GDOS applications include *EZ-Draw*, Microsoft *Write*, *Degas Elite*, and upcoming programs such as Timeworks' *Desktop Publisher* and *Publishing Partner Professional*. The SLM804 can also print from non-GDOS applications, as long as they have SLM804 printer drivers or support the printer's Diablo 630 emulation mode.

It's important to note that the SLM804 doesn't support the PostScript page description language, which has become a standard in many laser printers from Apple, IBM, AST, QMS, Qume and other manufacturers. This is a major flaw in my view, since without official Atari support of PostScript, the superior language is less likely to catch on in future ST applications.

The obvious reason Atari didn't build a PostScript printer is that it would have to pay an initial fee of over $100,000 to Adobe Systems for licensing the language alone, and then pay royalties for each printer sold. Not wishing to pass on much of that cost to the consumer, Atari built a $1995 sans-PostScript printer instead. But PostScript printers are going for around $3000 on the street, and I think Atari could have marketed a machine whose street price would undercut $3000 by a few hundred dollars. And Atari could have sold an inexpensive PostScript printer not only to ST users, which the SLM804 is limited to, but to the entire PC market.

**Atari's laser printer has no onboard microprocessor or RAM, so it uses its host ST's facilities for storing font information or building a bit-map. You'll need at least two megabytes in your machine to produce pages with multiple fonts or bit-mapped graphics.**

If you're interested in getting 300 dot-per-inch output from your ST or Mega system, however, the SLM804 is your best bet, since it is the de facto standard laser printer in the ST world now. This will be the laser printer most software developers will have in mind when designing new applications.

The SLM804 has a list price of $1995. Since it lacks a microprocessor and RAM , I expect it can be sold for considerably less, especially since $1600 is a typical street price for Hewlett-Packard's LaserJet Series II and clones. It's hard to tell at this point whether Atari will allow its dealers to discount the machine to this level, though.

### Internal Hard Drives For The Mega

Supra Corporation (503/967-9075), the popular third party hard disk and modem manufacturer in the ST world, has announced an internal hard disk for Atari's Mega machines — the first peripheral I know of that's designed exclusively for the Megas. It's called the MegaDrive ST and comes in 20 ($649) and 30 ($799) megabyte models. A 40 MB drive is planned. All models are scheduled for release in March.

Both drives have seek times of 65 milliseconds, and the 30 MB version gets additional speed performance by using track buffering techniques.

Supra recommends that you let a technician install the MegaDrive in your machine. It connects to the Mega's internal DMA port, mounting in the front of the machine besides the floppy drive, and shouldn't interfere with future internal products that will connect to the Mega's 68000 bus. It borrows power from the Mega's power supply. You'll have to drill a small hole in the Mega's front panel to place an LED that indicates that the MegaDrive is busy.

Be warned, however, that while Supra warrants its drive for 90 days, installing it will unfortunately void your Mega's warranty. □


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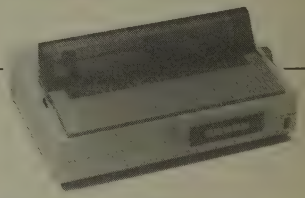

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# USER GROUP NETWORK

By Mary Eisenhart

Before we get on with this month's mail, I'd like to observe that once again it's **Computer Faire Time.** This annual hoopla is always a great place to check out new products and interesting conferences, with vendors and users out in force and bargains and entertainment galore. The event runs from April 7 to April 10 at San Francisco's Moscone Center, and we of *Micro-Times* heartily encourage any and all of you folks to stop by and say hello.

This month we received a letter from **Paul Goodwin** of Covina. Paul, it seems, recently acquired a spiffy new Epson Geneva Laptop and went in search of user groups. He found the **Cursor Club Epson** of San Dimas in our listings, attempted to call them, and was informed by the nice woman who now owned the phone number in question that the Cursor Club was no more. He called the BBS number and got no answer.

"I know it must be hard to keep up with all the groups listed in your magazine," says Paul, "but do you have any idea if this group is still in operation? Any help you can give me would be appreciated — the next closest group is about 30 miles away."

Well, the Cursor Club has obviously not kept us posted on its movements, but not for nothing do we call this User Group Network. So if anybody knows about Epson groups in the Covina area, whether or not the Cursor Club is among them, please give Paul a call at (818) 332-6917, and you will reap his and my heartfelt thanks.

It's also been a fairly active month on the orphan computer front — for example, I had quite a nice extended conversation with a gentleman who'd read my review of Sun Remarketing's upgraded Lisas and was going through major soul-searching about whether it was time to replace his beloved QX-10 running *Valdocs*...

**Calvin Demmon,** who wrote to us some time ago about **PLUG,** the **Plus/4 Users' Group,** sends along the news that the group now has over 800 members. The Plus/4, you may recall, was one of Commodore's more ephemeral machines, which ended its brief career by being sold at rock-bottom prices to people who discovered shortly thereafter that there was essentially no software for it. "Probably the most frustrating thing for a new Plus/4 user is trying to find out where to get information and software — which is why we started PLUG," says Calvin. So if you're one of those people who got a great deal on one of these machines and are now trying to figure out what to do next, Calvin encourages you to contact PLUG at Box 1001, Monterey, CA 93942. Admitting he may live to regret this, Calvin also passes along his phone number, which is (408) 372-9090.

**Victor** users, while not precisely orphaned, have had to deal with a few vicissitudes in their time, so for their benefit we pass along this word from **Clay J. Claiborne Jr.** of Los Angeles. Clay's the manager of Cosmos Engineering Company in LA, which is an authorized Victor dealer and provides a meeting site for the **West LA Victor User Group**; he'd like you to know that Cosmos offers a full range of Victor support, repair, and new products, including a 48-hour turnaround on all Victor 9000 repairs. Clay sends along a Cosmos brochure which makes it evident that these guys are serious about their Victors: "We realize that many Victor 9000 owners and users are being forced to move over to IBM PC compatible systems by software availability, institutional pressures, and many other reasons. As Victor users we have come to expect more than the IBM standard offers. The 9000 gave us more disk space, faster processing, and a much better screen..."

You get the idea. Victor folks in need of support or service, give Cosmos a call at (213) 930-2540.

**Reynolds,** the assistant secretary of **TUGNET,** sends this update. The group's new president is **Lowell Morrison,** who can be reached at (818) 894-7268. Lowell replaces **Mike Faith,** who has departed for Chicago. TUGNET is a technically-oriented group with an emphasis on MS-DOS; if you'd like to write for more info, their address is TUGNET, 12125 Riverside Drive, Suite #205, North Hollywood, CA 91607. The group is in the process of changing meeting locations from the Valley Plaza Community Center, so call for current meeting time and date.

**Larry Blair** of Long Beach announces a couple of changes on the local Commodore front. The **C.U.B.E.** group now meets at the Mid Cities National Bank at the northeast corner of Lakewood and Bellflower in the city of Bellflower at 7:30 pm on the first and third Mondays of the month. Meanwhile, Larry is pleased to report that he's the president of a brand new Amiga group, the **Long Beach Amiga User's Group.** Says he, "It is strictly Amiga and meets the third Sunday of every month from 1 pm to 4 pm. The meeting is held in the Mid Cities National Bank on the northeast corner of Lakewood and Artesia in Bellflower." The club has a large public domain software library and its own BBS; Larry invites your calls between 10 am and 1 pm at (213) 422-8226 if you'd like more information.

**Loyd Cribbs** of the **San Francisco Personal Computer Users Group** offers a preview of coming attractions: the March meeting on the 21st will feature a presentation by SFPCUG member **Debbie Norling,** who writes speaking programs for the visually impaired, on computer speech synthesis. The April 18 meeting will feature a File Program Shootout, with representatives from *Rapid File, Q&A,* and *AskSAM* presenting the fine points of their software; other companies may also be on hand. If you've got questions about flat-file databases, circle April 18 on your calendar. Meetings are held at 8 pm in Room 1, Building A at Fort Mason Center in SF. SIG meetings begin at 7 pm, as do software sales. If you'd like to know more, Loyd's the publicity chairman, so give him a call at (415) 751-5219.

In BBS news, **Ben Gardiner,** who's been running the free-of-charge **AIDS BBS** in San Francisco since its inception, informs us that the board is now a multi-line system thanks to the donation of a XENIX-based computer from the **Altos Foundation.** As you may recall, the AIDS BBS is the nation's oldest free BBS on AIDS, offering current information, historic documents, an extensive resource list, and discussion, and may be accessed at (415) 626-1246.

The board's operation has been greatly enhanced by its new software, written by UNIX programmer **Mark Pearson**; in celebration of this fact, the board is sponsoring a contest to name the conferencing program. Something nice and catchy like Fido or Opus, which are already taken. If you're the first prize winner, Ben and Mark will take you to dinner; other prizes include a box of diskettes, video rental, printer cables, good food, etc. Entries may be posted to the email section of the BBS, or print your suggestion clearly on a piece of paper and mail it to AIDS Info BBS, P.O. Box 1528, San Francisco, CA 94101, with "Attention: Contest" on the envelope. Ben requests that you be sure to include your return address, and notes that entries become the property of the AIDS BBS and will not be returned. Winners will be notified and given the opportunity to choose their prize.

**Roel Sarceno** happily announces that his **ViSion BBS** (415/366-6409) has recently undergone a major upgrade. It now offers 16 file transfer protocols including ZMODEM, live online games, 80 megabytes of storage, and a spiffy new US Robotics modem which supports 300, 1200, 2400 and 9600 baud callers. It also now runs 24 hours a day, so check it out.

Finally, from the **Grateful Dead Conference on The WELL** (415/332-6106) comes word from **James (Captain Trips) Scofield** that **Klaus and Gretchen Bender**'s **Dead Board** in Pennsylvania has recovered from its recent equipment problems and is now running happily at (717) 677-9573. James has a board himself, **Terrapin Station,** also on the East Coast at (203) 656-0134.

That's it for this time. Please keep that mail coming in, Snail to User Group Network, 5951 Canning Street, Oakland, CA 94609 and e- to microx on The WELL. See you next month, and also at the Faire. □

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**619**

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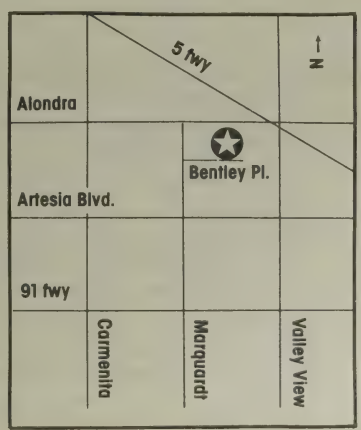


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### 805

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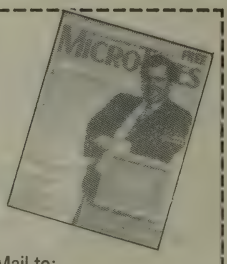

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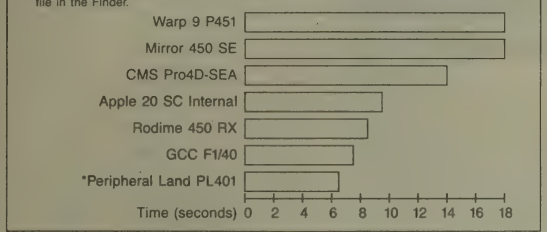
Warp 9 P451
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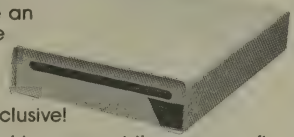

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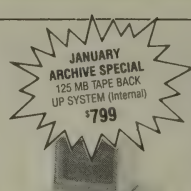

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## ASSOCIATIONS

**Computer Professionals for Social Responsibility.** The LA chapter is interested in computer reliability and preventing nuclear war, the socially useful direction of computer research, and similar topics. They meet most third Wednesdays at 7:30 pm at varying locations. Contact Rodney Hoffman, P.O. Box 66038, Los Angeles, CA 90066, (213) 932-1913 for more information.

**Organization of Professionals, Educators, and Novices (OPEN).** Tutorials, random access period, feature presentation, public domain library, and CP/M literature are all part of the monthly meetings of Osborne owners/users and MS-DOS transportables. Club BBS and newsletter. Call Frank L. Christ at (213) 498-4186 for more information. Meetings at Learning Assistance Center, CSU Long Beach, 3rd Wednesdays, 7 pm.

**The North Orange County Computer Club.** This group is the largest and perhaps the oldest in the county. It is affiliated with a large number of special interest groups and offers something for just about every user. General meetings are usually the first Sunday of every month in the Hashinger Auditorium, Chapman College, Orange. For info, call (714) 998-8080.

**The South Orange County Computer Club.** A general computer club that meets the first Tuesday of every month at 3545 Harbor Blvd., Costa Mesa. Meetings begin at 7:00 P.M.

**Valley Computer Club.** Monthly meeting at 7 pm, first Wednesday of month in Burbank Board of Realtors Bldg., 2006 W. Magnolia Blvd., Burbank. All types of micros represented.

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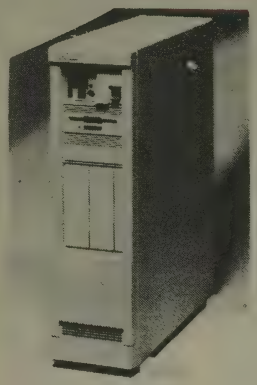

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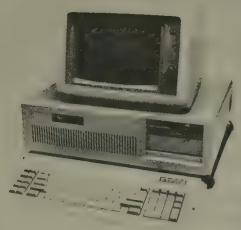

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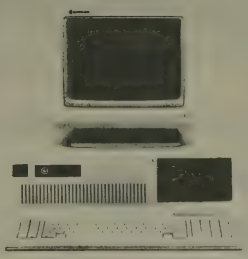

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call for information

San Gabriel Valley:
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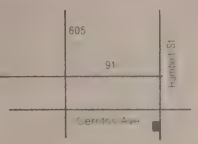
San Gabriel, CA 91776
Tel: (818) 285-7560

Orange County
10529 Humbolt St.
Los Alamitos, CA 90720
Tel: (213) 430-5378
(213) 430-0189



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Contact W.R. Robinson, 11850 Louise, Granada Hills, CA 91344, (818) 368-1383.

**San Diego Computer Society.** Umbrella organization for over 40 Special Interest Groups (SIGs). Sponsors meetings, newsletters and annual computer fair. Meetings at Mesa College, 7250 Mesa College Drive, San Diego, 11:30-4, third Saturday each month. Contact Membership Chairman, P.O. Box 81444, San Diego 92138, (619) 549-3783. BBS (619) 549-3788.

**Consolidated Computer Club.** Dues $25 yr. For meeting place and time send SASE to David Nussbaum, 14200 Polk Street, #53, Sylmar, CA 91342-2966, or call (818) 362-9718.

**Hughes Aircraft Computer Clubs.** This club is for Hughes Aircraft employees only, but the BBS is open to everyone. Upload and download boards for Macintosh, IBM, Atari, Commodore, etc. Each board has its own public message service plus general message board. Contact Bud Grove, 21111 Dolores #146, Carson, CA 90745. BBS (213) 549-9640, 300/1200 baud, 24 hrs., 7 days.

**Ventura Personal Computer User's Group.** All MS-DOS and PC-DOS machines. Meetings 3rd Saturday 9 am-12 noon, Foster Library, 651 E. Main, Ventura. Contact Mike Regan, President, 301 Dana Point, Ventura, CA 93004, (805) 647-8273.

**Micro User's Group — SFV Board of Realtors.** Meetings 7232 Balboa Blvd., Van Nuys, 7 pm. third Thursday. Contact Mary Lou Williams, (818) 786-2110 for more information.

**South Bay Computer Education Group.** Supporting Apple, Atari, Commodore, IBM and compatibles, and TI99/4A. Meeting 2nd Wednesday of each month. The 7 pm at 3675 Torrance Blvd., Suite 202, Torrance, CA 90503. Contact Jack Ward (213) 530-4879 or Judy Adams (213) 540-5010.

**UCLA PC Users Group.** IBM PC or compatibles owners welcome to join us on the 2nd Tuesday of the month, 7 pm. Public domain library , SIGs, BBS, seminars and newsletters. NPI Auditorium, UCLA, Westwood Plaza, Level C. For more information call (213) 473-6668.

**Citizens Veto.** For users with an interest in socio-economic issues who might want to try their equipment in working a model of a new approach. Primarily graphics and numbers, minimal text. Ewald O. Schlachter, (415) 452-0151.

**ICCA (Independent Com, Consultants of Americ.** nonprofit national associa ,n dedicated to the independent computer consultant. Its goals are to promote professionalism within the industry, increase awareness of ICCA to clients, and provide group benefits to members. Meets at Revere House, Tustin, 2nd Thursday, 6 pm. Contact Bill Creel, membership chairman, ICCA-OC, P.O. Box 3067, Santa Ana 92703, (714) 666-1981.

**LAC-BUG (Learn About Computers — Beginner's Users Group.** All computer owners and prospective owners eligible, ages 3 to adult. Educational materials and hands-on training included with membership. 24 hour telephone: (213) 372-8909. Mailing address: 6506 Arizona Avenue, Suite 127, Los Angeles, CA 90045.

**Association For Women In Computing.** L.A. Chapter meets on the second Wednesday of the month, 6:00 pm, at the Proud Bird Restaurant, (near LAX). Contact the Program Chair at P.O. Box 3966, Torrance, CA 90510. (213) 657-0327.

**Southern California Geneological Society Workshop.** Meets the fourth Saturday of the month, 4:00-6:00 pm, at the SCGS Library, 122 S. Golden Mall (rear), Burbank, CA 91502. A self-help group to provide a forum for information and experience exchanges on the use of computers in geneology. Contact W.R. Robinson, SCGS, P.O. Box 4377, Burbank, CA 91503. (818) 368-1383 or (818) 843-7247.

## NATIONAL/ INTERNATIONAL

**Network Users Association.** 2111 Eisenhower Ave., Suite 400, Alexandria, VA 22314. (800) 638-8510 or (703) 683-8500.

**TPUG World's largest Commodore Users Group.** $25 annual membership entitles you to access to library of public domain software for C-64, VIC 20, PET, CBM, SuperPET, B-128. Coming soon Plus 4, C-16, C-128. New disks added each month. Also TPUG Magazine (10 per year), free access to TPUG's Bulletin Board Modem System, 24 hours, 7 days. TPUG Inc., 5300 Young St., Willowdale, Ontario, Canada M2N5R2, (416) 733-2933.

**Apple Co-op.** 290 SW 43rd, Renton, WA 98055. (201) 251-5222.

**JUG (Jefferson State Computer Users Group).** Many SIGs, newsletter. Dues $5.00 year, some SIGs additional. Contact JUG, P.O. Box 457, Gold Hill, OR 97525-0457.

**MicroPro Users Group of America.** National group with over 200 members worldwide. Dedicated to supporting MicroPro products, especially WordStar and InfoStar, for any hardware. c/o Procyon Associates, 140 Riverside Drive, New York, NY 10024. (212) 595-4811.

**Golden Apple Club,** Apple II and Macintosh. Contact Stefano Minotto, Golden Apple Club, Riviera Tiso da Camposanpiero, 26, 35100 Padua, Italy.

**F.O.G.** 15,000 member group supporting all CPM users. Dues of $24.00/yr. include 80-80 pg. FOGHORN monthly's access to 270+ disk library, 40+ RCP/M systems, and back issues; and a technical support hotline. All meetings conducted by 140+ local groups. Gale P. Rhoades, P.O. Box 3474, Daly City, CA 94015, (415) 755-2000.

**Getec s.r.l.** Contact Silvio Esengrini, Via dei Guarneri Nr. 24,-20141 Milan, Italy. Phone: 39/2/5696502, 39/21 5694185.

**Italtel S.p.a.** Contact Michelangello Sala, C.Na, Castelletto, 20090 Settimo Milanese, Milan, Italy. Phone 39-2-4388-4288.

**PLUG (The Plus/4 Users' Group).** Dedicated solely to support of the Commodore Plus/4. No regular meetings, 200 members in US, Canada, Mexico, and Europe. Newsletter, public domain software library. P.O. Box 1001, Monterey, CA 93942.

**KAPPA (Memphis Kaypro Users Group).** Meetings at 2 pm, 1st Saturday of the month, Room 2, Jennings Hall. Contact Hugh Lamar, 5983 Macon Cove, Memphis, TN. (901) 377-4140.

**The AppleWorks Users Group (TAWUG).** c/o Regional Rep, 27421 Berenda Way, Hayward, CA 94544, (415) 887-7499.

**FORTH Interest Group, International Office.** P.O. Box 8231, San Jose, CA 95155. For further information call (408) 277-0668.

**Apricot User Group (APRICUG).** Box 98, Malverne, NY 11565.

**Spellbinder Users' Group** has an international newsletter with useful macros written by members, advice on new applications, news, and word-processing problem solving. All experience levels. California members welcome. Write P.O. Box 14, Newark, Notts, England NG24 4TP; telephone (0636) 77313; telecom Gold/Dialcom Mailbox 72: MAG95610.

**National TeleVideo Users Group.** Meets 7:30 pm, 3rd Thursday, 1170 Morse Ave., Sunnyvale. P.O. Box 22007, San Francisco, CA 94122. Call for info — David, (415) 753-1552.

**Apple Fontrix Club.** Monthly newsletter. P.O. Box 29857, Thornton, CO 80229-0857.

**N.A.B.V.I.C.U. - The National Association of Blind and Visually Impaired Computer Users.** The purpose of this group is to gather information that will assist the blind or visually impaired person in utilizing the enormous potential of computers. It supports **CompuHelp**, a menu driven database-bulletin board programmed for use by the blind and visually impaired. It is available 24 hours a day, 7-days a week, 300/1200 baud, 8 or 7 bits, even or no parity, 1 stop bit. (916) 786-3923. Compuhelp is also available on disks. For more info, contact Otto C. Haiungs, Chief Executive Officer, Sysop, at P.O. Box 1352, Roseville, CA 95661-1352. (916) 783-0364.

**28 Barbary Lane.** Meets at 121 13th Ave. East, Seattle, WA, Fridays 8:00 pm. Contact A. Madrigal, (206) 323-2828. BBS: (206) 323-2828.

**MICROenvironment: Microenvironmental Information Consortium For Researchers Overseas.** (800) 323-7611. World Headquarters, 712 Avery Rd. W. Winlock, Washington 98596, USA. Micro on MCI mail, ECONET & WELL. TELEX number 6502928733 via WUI.

**American Computer Users Temporarily in Europe (A.C.U.T.E).** Going overseas or already there? We are a users group dedicated to helping you better adjust and understand how to survive in the overseas environment with your computer system. We show you how to find things you will need at reduced member prices. We also consult firms and developers on how to make software more acceptable to the international market. We do foreign language translation of computer software and provide referral services. Further information available by mail: A.C.U.T.E., Postfach 4, D-8818 Lehrberg, West Germany.

**Folklife Terminal Club.** Almost Free Software. An international Commodore computer users group, with members in more than twelve countries, has made its software library available to other user groups and individuals. The club has issued new catalogs of software from its archives which contain more than 6,000 public domain programs. The programs are stored on diskettes and are usable in various configurations of PET, CBM, VIC, C-64, PLUS 4 and C-128 computers. The software itself is free. The first diskette that should be ordered is the new "CATALOG DISK" which contains an automatic disk cataloging program, a listing of all the available programs, complete instructions and Associate Membership in the club. There is a copying and mailing fee of $15 per diskette. Please specify which computer and disk drive you have. Contact Folklife Terminal Club, Box 555-DN, Co-op City Station, Bronx, NY 10475.

**Miami PC User Group.** Meets at 16400 N.W. 32nd Ave, Miami, FL. Second and fourth Wednesdays at 8:00 pm. Contact Jeffrey Feinberg, 2500 E. Hollandale Beach Blvd., Hollandale, FL 33009. (305) 457-7744.

## USER GROUPS

### AT&T

**AT&T PC6300 Users' Group.** Meetings at various locations—contact BBS for latest information. Or write Eric Levinson, P.O. Box 7364, Burbank, CA 91510. BBS (818) 954-0530, 300/1200, 8-N-1, 24 hours.

**ORCA - Orange Riverside Counties AT&T 6300 UG.** Meetings bimonthly, second Saturdays, 11:30 am, at 2144 Michelson Drive, Irvine. Contact Chuck Patten, 1220 Page Circle, Corona, CA 91720, (714) 851-0119, ext. 234.

### ADAM

**Adam Users of Southern California.** Come and keep the ADAM going. We have access to some of the people who developed software for ADAM and we are going to create a base for tips, reviews, and a BBS. Get on line with ADAM. Meetings at Airport College Center, Sepulveda and Century, 4th Sunday, noon. Contact Harvey Klein, 1736 S. Bedford, LA, (213) 553-1062 or Paul Shecter, 5545 Lindley, Tarzana.

### ALPHAGRAPHICS

**Alphagraphics.** Contact Stella or Jim Muller, 16425 Bernardo Ctr. Dr., San Diego, Ca. 92128, (619) 451-2250.

### AMIGA

**Amiga Friends (AF).** Contact Russ Kavanagh, (714) 898-2947. Call for more information, we'll see you there!

**San Fernando Valley Amiga User Group (SFVAUG).** Meets 2nd Thursday of the month, 7-10 pm, at American Legion, 7338 Canby Ave., Reseda. We've got demos, SIGs, newsletter, PD library, disk of the month, ANSWERS. Bring your AMI, we have lots of room now! Contact Randy Likins, (818) 709-0932.

**Bits & Pieces Amiga Group of Anaheim.** Meets every Tuesday 6:30-10 pm at 1330-A N. Kraemer Blvd., Anaheim, CA 92806. C-64, C-128, Amiga. Public domain software, technical help, guest speakers, much more. Contact John Callaci or Mike Dalton (714) 630-8644/ 630-8711 for information.

**Color America.** Amiga SIG meets 1-3 pm on the third Saturday of the month at Rosemead Community Center, 3936 N. Muscatel Ave., Rosemead. For information contact Mark Randall, 2227 Canyon Rd., Arcadia, CA 91006, (818) 355-6111.

**Amiga Tech Users Group #1.** Meets 4th Tuesdays, 7 pm, University Union, Cal Poly Pomona. Contact Mark Randall, (818) 355-6111. Call for more information, we'll see you there!

**Amiga Tech Users Group #2.** Meets at Rosemead Community Center, 3936 N. Muscatel Ave., near Valley Blvd., Rosemead, 1 pm, 3rd Saturday of the month. Contact Mark Randall, (818) 355-6111. Call for more information, we'll see you there!

**Inland Empire Amiga User Group (IEAUG).** Meets 7 pm, 3rd Tuesday of the month, California School for the Deaf, 3044 Horace St., Riverside. Contact Paul Corbet (714) 684-8245. Call for more information, we'll see you there!

**LA Amiga Users Group (LAAUG).** Meets 3rd Wednesday, 7:30 pm, Veterans Memorial Auditorium, Culver and Overland Blvds., Culver City. Call (213) 387-3698 for more information. We'll see you there! BBS: (213) 559-7367.

**West Side Amiga Users Group (WAUG).** Meets 2nd Wednesday, 7:30 pm, John Adams Junior High School Cafeteria, 16th and Ocean Park Blvd., Santa Monica. Call (213) 451-0713, during the day, for more information. We'll see you there!

**Apple/Valley Computer Club.** Member interests include Apple, Amiga, IBM and others. Meetings are held on the 2nd Wednesday of each month, 7:30pm, at Valley Presbyterian Hospital, meeting room #3, 15107 Van Owen, Van Nuys, CA. For more info, contact Dr. William H. Trent, 6502 Kester Avenue, #7, Van Nuys, CA 91411, (818) 988-1752.

**Ventura Amiga Users Exchange. (VAUX).** Amiga users group for Ventura County. Meetings held on the second Monday of each month, 7:30 pm at the E.P. Foster Library, 651 Main Street, Ventura. Call (805) 646-7121.

### AMSTRAD

**West LA Amstrad.** Meets every fourth Tuesday, 8:00 pm at Venice High School. Call (213) 397-7981 for further information.

### APPLE

**Original Apple Corps.** First Apple group ever. SIGs for AppleWorks, Telecommunications, Educators, Macintosh. Meetings in the Santa Monica Mall, second Sunday of the month, 3rd floor Community room, 12 noon. Contact Rich Rollons (213) 378-0707, or Fred Duffy, (213) 396-5515.

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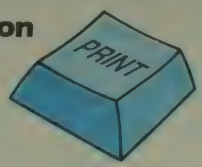


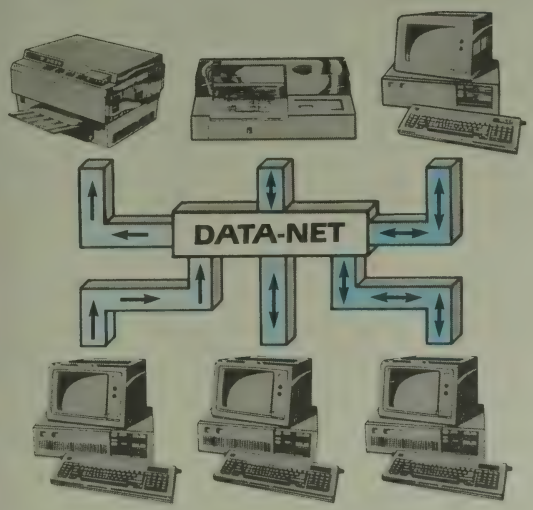


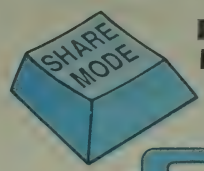


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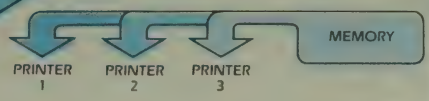


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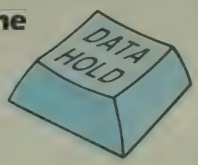


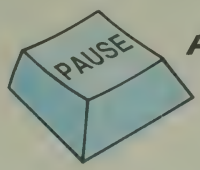


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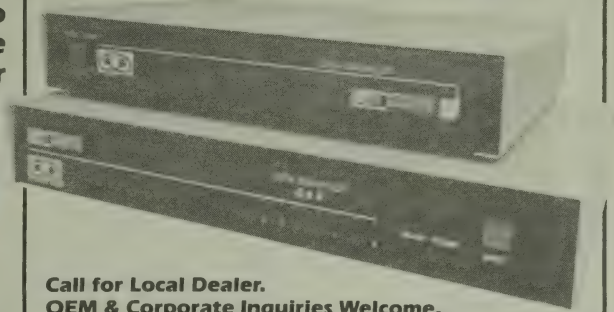

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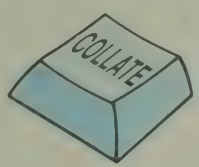


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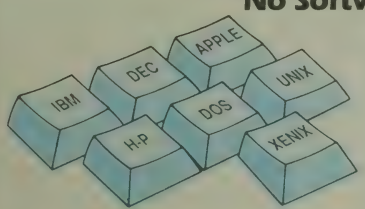


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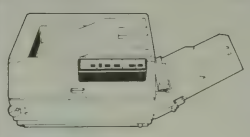

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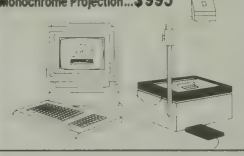

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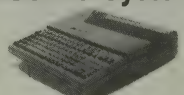

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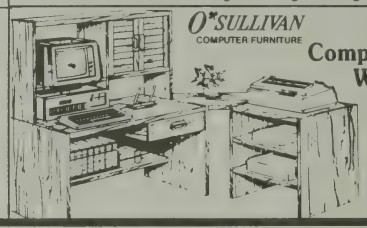


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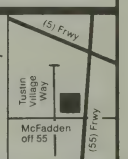



**The Orange Apple Computer Club** meets 9 am-12 pm the first Saturday of each month in the Science Hall at Orange Coast College, Costa Mesa. We have over 700 members, ranging from beginners to certified Apple developers, and a large Apple II public domain software library. There are several very active special interest groups which include Apple III, educators, Apple II, modem and investors. For further info call (714) 770-1865.

**Tri City Apple User's Group** (Glendale, Burbank, Pasadena). Speakers, product demos, public domain library and friendly experts ready to answer any Apple II question. Meetings are scheduled the third Thursday of the month at Casa Colina Neurological Learning Center, 50 North Hill St., Pasadena at 7:00 pm. Contact Marie Kaden at (818) 846-6682.

**North San Diego Apple Club.** Meets 1st Tuesday of each month at Meadowbrook Middle School, Meadowbrook Lane, Poway, 7 pm. Contact Bill Walker (619) 579-9649 or Chuck Newby (619) 566-0387, P.O. Box 75, Poway, CA 92064.

**SD Aillers.** Want to start Apple III user group in San Diego area. Contact James Fair, P.O. Box 1592, Lakeside 92040, (619) 561-3270.

**Applejacks of the Inland Empire.** Primarily for Apple II users. Meets first Wednesday and third Thursday of the month, 7-9 pm, at Norman Feldheym Central Library, 555 W. 6th St., San Bernardino. Contact Scott Zehm at (714)883-2234 for information, or write Applejacks, P.O. Box 23025, San Bernardino, CA 92406.

**Appleholics Anonymous of Ventura County.** Software library, club BBS, newsletter, hardware and software demos. 150 members. Meetings sometimes vary—call to verify (805) 482-3501, 484-2611, 659-5326, 985-9781. Meetings 3169 Telegraph Road, Ventura, 9:30 am, usually 2nd Saturday.

**Apple/Valley Computer Club.** Member interests include Apple, Amiga, IBM and others. Meetings are held on the 2nd Wednesday of each month, 7:30pm, at Valley Presbyterian Hospital, meeting room #3, 15107 Van Owen, Van Nuys, CA. For more info, contact Dr. William H. Trent, 6502 Kester Avenue, #7, Van Nuys, CA 91411, (818) 988-1752.

**The Driveway Group Ltd. User Group.** Meets at the Bellflower Public Library. Time and date varies. We are forming a new club! Deals mainly with special interest programmers and software. We need members! We need to get started! Phone (213) 867-7724 for information.

### APRICOT

**Apricot Roundtable Group of Hapless Hackers (ARGHH!)** An Apricot user's group is forming in east Long Beach, open to any Apricot, Xi, F1, F2, F10 or FP user, or anyone else with MS- or PC-DOS and 3½" disk drives. Phone Jim Bliss at (213) 425-6302. Meetings 7 – 10 pm, 3rd Wednesdays or at such other time as membership decides, at 7215 Killdee St., Long Beach, CA 90808.

### ASHTON-TATE

**dBUG-dBASE Users Group.** For all levels of dBASE users from beginners to expert. Meets 3rd Monday each month, 7-9 pm, Blue Cross Bldg., 21555 Oxnard, Woodland Hills. For more info contact Bruce Ascough, (818) 789-0723.

**dBASE III SIG of UCLA PC Users Group.** Meets once per month in Santa Monica—date varies. Contact Tom Rombouts, 1428 N. Curson #6, LA, CA 90046, (213) 874-7471.

**dVALLEY dBASE Users Group.** Largest and most active dBASE group in So. Calif. Meets 4th Monday of the month in Van Nuys. Large meeting room with plenty of parking. Dedicated to dBASE and its add-ons, all levels. Large cataloged library of programs and routines. Exciting group learning projects, "fix-it-session" at every meeting, plus speakers and demos. For information contact Louie Astorga, President, c/o Real Estate Services, P.O. Box 7140, Canoga Park, CA 91304-7140. (818) 998-3210.

### ATARI

**Atari Computer Association of Orange County (ACAOC).** Join one of the biggest Atari user groups in Southern California. Monthly magazine, large public domain library, and club BBS. Dues $24.00/year; $18.00 for non-attending out-of-town members. Meetings at Golden West College, Room 131, Huntington Beach, 1 pm, fourth Sunday of the month (ST meeting same time and place on second Sunday). P.O. Box 9419, Fountain Valley, CA 92728 or (714) 838-3099 for more information.

**West LA Atari Users Group.** Come join fellow Atarians! Dues are $25.00/year. Newsletter, P/D library, ATR-Sig, discounts, guest speakers. Please call for directions to meeting room! If you're reading this, you belong with us. Meetings first and third Wednesday of the month, 7:30 pm, Lincoln Park, Santa Monica, Wilshire & Lincoln. Contact Bill Skurski (213) 552-4739.

**Los Angeles Atari Computer Enthusiasts (LAACE).** Join Los Angeles' largest and oldest Atari Users' Group, now in our 6th year. Enjoy our monthly meetings and newsletter. Participate in our educational SIG (Special Interest Groups) seminars and meetings. Learn how to get the most out of your Atari; access our hundreds of public domain programs; benefit from the help and experience available from our experts. Come as our guest on the 1st Tuesdays of the month (2nd Tues if holiday occurs in 1st week) at 7:00 pm at Granada Hills High School, 10535 Zelzah Ave., Granada Hills, CA. For full benefits, including member access to our 10 meg BBS, dues are $20/yr ($25 for entire family). Write P.O. Box 7752, Van Nuys, CA 91409 (include your phone number) for additional information. BBS: (818) 700-1652.

**Santa Clarita Valley Atari Computer Enthusiasts (SCV-ACE)** invite you to join us. Meetings are the first Thursday every month from 7 to 9 pm at the Moose Lodge, 18000 W. Sierra Hwy., (1/2 mile north of Soledad Canyon Road), Canyon Country. For info call Bob at (805) 259-6540.

**Atari Computer Enthusiasts Network (ACENET).** Umbrella group representing many Southern California Atari groups. If you can't locate a user group in your area, contact John Tarpinian at 6055 Cahuenga Blvd., #2, North Hollywood, CA 91606, (818) 760-1831.

**Hooked on Atari Computer Keyboard Society (HACKS).** Meetings on the first Saturday of the month in the Burbank area. For more information contact John Tarpinian, 6055 Cahuenga Blvd., #2, North Hollywood, CA 91606, (818) 760-1831.

**AA-Atari Users Group.** Meets at Upland Public Library, 450 N. Euclid Avo. Atari 400, 800, XL/XE group meets second Tuesday, 6-9 pm. Call Juan Valdes, (714) 980-6841 for more info. 520/1040ST group meets fourth Thursday 6-9 pm. Call Jay McCarthy, (714) 829-8722 for more information.

**MAST—Mid-Cities Atari ST.** Meetings at 9025 E. Artesia Blvd., Bellflower, first Sunday, 7


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**South Bay Atari Computer Enthusiasts (S.B.A.C.E.).** Meets 2nd Tuesdays, 7:30 pm, VFW Hall, 1865 Lomita Blvd., Lomita. Meetings consist of guest speakers from software and hardware suppliers, demos by members, q & a periods, along with current Atari rumors. Newsletter, published 6 times a year, included with $20/yr membership fee. Write S.B.A.C.E., P.O. Box 83668, Los Angeles, CA 90083, for more information, or call Dick Reaser, (213) 645-7063.

## AUTOCAD

**AutoCAD Los Angeles Users Group.** Meetings fourth Thursday of the month (except November and December—Meetings Nov. 20 and Dec. 18), Church of Religious Science, 260 North Pass Ave, Burbank. Contact Tesfaye Abagaz, (818) 843-5770 (work).

## COMMODORE

**San Diego Commodore Users Group.** Meets third Wednesday, 7 pm, 2557 3rd Ave. (Women's Club), San Diego. For all Commodore machines. Contact Jane Campbell, (619) 584-2872 for more information, or write: P.O. Box 86531, San Diego, CA 92138-6531.

**San Fernando Valley Commodore Users Group.** Meets 4th Wednesday of the month, 7:00 pm, at Mercury Savings, Sherman Way & Sepulveda.

**San Luis Obispo Commodore Computer Club** 1766 9th St., Los Osos, CA 93402. (805) 528-7475 BBS.

**The Commodore Users Group - San Juan Capistrano.** This group of C64 users meets the second Saturday of every month from 9:00 am till 12:00 at Great American Federal Savings and Loan, 32232 Camino Capo, San Juan Capistrano. For info call 496-5745.

**Orange County Commodore Technical User's Group C-TUG.** Orange County's Commodore user group. Club newsletter, two 300/1200 baud BBSs, door prizes, SIGs in Comal, DOS protection, data bases, wpros, and BASIC. Custom software and ROM chips, and just plain good times. Meetings at Mercury Savings and Loan, 4th and Newport, Tustin, fourth Sunday of the month, 10:30 am. Contact Ellis L. Higham, corresponding secretary, P.O. Box 8342, Orange, CA 92664, (714) 554-9222.

**Hollywood User Group (HUG)** for Commodore computers. Meets 2nd Saturday of the month at Plummer Park, Conference Room, 7377 Santa Monica Blvd., West LA at 12 noon. Contact HUG BBS (213) 874-8256 (24 hrs) or write HUG, P.O. Box 38313, Hollywood, CA 90038.

**Southern California Commodore Users Group.** Learn more about your Commodore 64. Extensive public domain disk library. Meet at Mid Cities Bank in Gemco shopping center in Bellflower, on the corner of Artesia and Lakewood Blvds. 7 pm, 3rd Tuesday of every month. Contact Dan Klafike, 1101 E. Rosecrans Ave. Suite 203, Norwalk, CA 90650. (213) 864-2874.

**C-128 West UG.** User group for owners of the Commodore C128, from beginner to advanced; PD software available. New group still assessing the needs and interests of members. Intend to network with other user groups on C128 software. Meetings 2nd Tuesday, 7:15 pm, McKinley School in Santa Monica, Santa Monica Blvd. and Chelsea. Contact Don Campbell (213) 828-9308.

**Inland Empire IBM/C64 User Group.** Major subjects are local area networks, small business software, data communications. Send SASE for free newsletter with dates and software library. Contact Winfried Hofacker, P.O. Box 988, Chino Ca 91708-0988.

**Commodore Creations Users Group (CCUG).** We offer library, newsletter, and other services; upcoming BBS; soon to be member of Commodore World. Meets 2nd or 3rd Sunday of each month 2-4 pm. Membership dues $26 per year. Call or write for info: Brian R. Klotz, 1135 Coronet Ave., Pasadena, CA 91107 (818) 351-8198.

**Back-Country Commodore Club.** Meets first Thursday 7 pm, Ramona Lutheran Church on 14th St. Check us out for relaxed, informative group discussions. We're here to help those with problems and to promote better uses of Commodore 64s, 128s, and Amigas. Contact Gerry White at (619) 789-3209, 511 14th St. #D-13/ P.O. Box 373, Ramona, CA 92065. Meetings at 617 16th St., Ramona, CA 92065, 7 pm, 1st Thursday each month.

**General Dynamics Commodore Computer Club.** Meets third Tuesdays, 4:30 pm, Convair Rec. Assn. room C. Commodore 64 and 128 only. Contact Al Wilson, (619) 429-6790 for information.

**C.U.B.E. Commodore Users, Buffs, and Enthusiasts** meet first and third Mondays of each month, 7:30 pm, East Side Christian Church, 668 Obispo, Long Beach. Contact Ted Lynch, P.O. Box 20288, Long Beach, CA 90801. (213) 435-4815.

**Com-Pacs.** Meetings and/or copies of public domain software and discussion of problems. New computer C64/128 technologies. Sales and swaps of equipment. Meetings at 2354 Elmgrove St. Los Angeles, CA, Saturdays, 3 pm. Contact Lon Damiani, (213) 222-2277.

**PLUG (The Plus/4 Users' Group).** Dedicated solely to support of the Commodore Plus/4. No regular meetings, 200 members in US, Canada, Mexico, and Europe. Newsletter, public domain software library. P.O. Box 1001, Monterey, CA 93942.

**Pacific Computer Club (Commodore).** Meetings 391 S. Madison, Pasadena, 2nd Thursday, 7 pm. Contact Norman Sauppe, (818) 792-9840.

**FCUG/SixtyFourum.** PD library, newsletter, meeting 3rd Saturdays, 8:30 am. Contact George Beardon, P.O. Box 16098, Fresno, CA 93755, (209) 291-7053. BBS (209) 431-6288.

**Central Coast Commodore Users Group.** Meets 3rd Tuesday of each month. Contact Gilbert Vela, 4237 Plumeria Ct., Santa Maria, CA 93455. CCCUG BBS (805) 934-2216, 24 hrs/7 days, 300 baud, Punter BBS protocol for downloads.

**Diamond Bar User Group (DBUG).** The Diamond Bar User Group is dedicated to the Commodore line of computers, C64, C128, and the Amiga. The club has a large public domain software library base, especially Commodore CP/M. Free raffles, technical discussions, software demonstrations, and the monthly freebie disk can be found at most any meeting. Meetings 2nd and 4th Wednesdays, 7 pm, Diamond Bar Library, 1061 S. Grand Ave., Diamond Bar, CA. Contact David Dietzel, (714) 947-1882 for more information.

**South Orange County Commodore Programmers and Users (CPU).** Meetings at Great American Savings, 23688 El Toro Road, El Toro, third Saturdays, 9 am. Contact Don Gribble, President, 25401 Champlain Rd., Laguna Hills, CA 92653, (714) 830-2430 or (714) 855-8320.

**West Orange County Commodore User Group.** Meetings 1st Sundays, 1 pm, Mercury Savings, Buena Park, corner of Valley View and Lincoln. Write for info: P.O. Box 6441, Buena Park, CA 90622; or call Mark Stanford, (714) 772-4182 or Art Collins (714) 821-0195.

**Bits & Pieces Amiga Group of Anaheim.** Meets every Tuesday 6:30-10 pm at 1130-A N. Kraemer Blvd., Anaheim, CA 92806. C-64, C-128, Amiga. Public domain software, DOS classes, technical help, guest speakers, newsletter and much more. IBM group meets first and

third Saturdays of the month at 10:00 am to 2:00 pm. Sponsored by Transnational Electronics. Contact John Callaci or Mike Dalton (714) 630-8644/ 630-8711 for information. BBS: (714) 630-5619.

**The Pasadena Commodore Computer Club** meets the first and third Wednesday of the month at 7 pm in the Circadian Room of the cafeteria on the campus of Pasadena City College. SE corner of Colorado and Hill. For more information write to PCCC, P.O. Box 1163, Arcadia, CA 91006, or call (818) 447-2212 after 2:30 Pacific time.

**Osborne Komputer Owners Klub (OKOK)** is a microcomputer user group serving a variety of computers: Osborne, Kaypro, Commodore C128, IBM and clones. As an affiliate of FOG, we serve both MS-DOS and CP/M operating systems. We offer monthly meetings, classes, public domain software library, electronic bulletin board and special purchase opportunities. Meetings second Wednesday of the month, 7:00–10:00 pm. Meetings held at the Altadena Public Library, 600 E. Mariposa, Altadena, CA. Contact Lionel Soracco, (818) 794-3243, or write OKOK, P.O. Box 40429, Pasadena, CA 91104.

**Commodore Helpers User Group Of Long Beach.(CHUG).** Meets second Saturday of each month, 9:00 am to 12:00 noon at Mercury Savings Bank, 4140 Long Beach Blvd. Dues $12.00 a year. Visitors and families welcome to attend. Support the C64, C128 and Amiga. Q-Link, SIG and more. Newsletter distributed at meeting. Demos and more. We welcome people who need help with their Commodores. Free disk for members at each meeting. Soon to come: area BBS for users and professional software demos. If you have any questions call Rodney Hayes, president, at (213) 863-8420, from 6:00 pm to 10:00 pm, M-F.

**Success.** Commodore group meets at 18th and Oak, Paso Robles, CA on the second Tuesday of the month at 7:00 pm. Contact Wayne Weichel (805) 238-6294 for information.

**East County C64 Owners (ECCO).** Meets at Coleman college in San Diego at 7:00 pm on the first and third Fridays of the month. Contact Gary Bell at (619) 561-4245.

**GEOS Users.** Dedicated solely to helping Commodore owners learn more about GEOS for the C64 and C128. All information and disks exchanged by mail. Membership is $20 per year. Our first GEOS applications diskette and monthly newsletter is included with membership. Please specify which computer and disk drive you have. Contact: GEOS Users, 21634-A Belshire Ave., Lakewood, CA 90716.

## CORDATA

**Cordata Users Group.** Meets 2nd Fridays, 7 pm. 20630 Lassen St., Chatsworth. Contact Alicia Fahey, (818) 709-6202 for information.

## CP/M

**CP/M SIG.** Meets first Sunday of the month, 10:30 am, at Chapman College. Contact Barry Cole (213) 390-3851. BBS: (714) 998-8080.

## DEC

**DECUS Inland Empire PC-LUG** Digital Equipment Computer Users Society. Free to all DEC users; Decmates, Rainbows, Professionals; P/D software; guest speakers; software /applications assistance available; FIDO bulletin board. Meets Cal Poly-Pomona campus, Library Bldg 15, Room 12, 7:30 pm 3rd Tuesday of each month. Contact Jan Snyder, 380 Verona St., Upland, CA 91786, (714) 620-7511 ext. 4376.

**DECUS Southern California PC-LUG.** Digital Equipment Computer Users Society. Free to all DEC users; Decmates, Rainbows, Professionals; P/D software; guest speakers; software/applications assistance available; FIDO bulletin board. Meets 10:30 am, 1st Saturday of the month, Press Telegram Bldg., 3rd Floor, 604 Pine Ave., Long Beach, CA. Contact Bill Davis, 1457 W. 219th St., Torrance, CA 90501. (213) 827-4600.

**DECUS Rainbow Pacific PC-LUG** Digital Equipment Computer Users Society. Free to all DEC users; Decmates, Rainbows, Professionals; P/D software; guest speakers; software /applications assistance available; FIDO bulletin board. Meetings at Digital Equipment Corporation, 6101 W. Centinela Ave., Culver City, CA 90230, 7 pm, 2nd Wednesday of each month. Contact Don Braums, 3312 Summertime Lane, Culver City, CA 90230, (213) 202-1784.

## EASYBUSINESS

**Easybusiness Systems Users Group.** CPAs, Consultants, and other business people interested in Computer Associates Easybusiness Systems' Accounting Software. For information, contact Gary Robinson (213) 398-6544.

## EPSON

**Cursor Club Epson** 402 W. Arrow Highway, Suite 6, San Dimas, CA 91773. (714) 559-8361, Bulletin Board: (714) 592-6316.

**San Fernando Valley Epson User Group.** Meetings at Fallbrook Square Community Room "The Meeting Place" off the Food Court in the new Fallbrook Mall, 6633 Fallbrook Ave., Canoga Park, between Victory and Vanowen. Meets 3rd Wednesday of each month at 7 pm. Contact Pat Denslow, (818) 881-4029 for information.

**Epson Users Group of Orange County.** 6075 Jeffrey Mark St., Cypress, CA 90630, (213) 414-4817.

**Epson Users of San Diego.** P.O. Box 87448, San Diego, CA 92138, (619) 560-7604.

**High Desert Epson Users Group.** 933 Cottonwood Drive, Barstow, CA 92311, (619) 256-3541.

**PSC/QX.** 2934 Wilshire Blvd., Santa Monica, CA 90403, (213) 453-4535, Bulletin Board: (213) 474-4952.

**South Bay Epson Users Group.** 1115 Cerise Avenue, Torrance, CA 90503, (213) 328-9916, Bulletin Board: (213) 618-1940.

**Epson Computer Club of America.** Monthly meeting 2nd Saturday of the month at 10 am, Mercury Savings and Loan, Irvine Blvd. one block east of Newport Ave. Messages Epson West Bulletin Board (714) 630-7104 User area B:15. Monthly newsletter "The Help Key." Contact Roy Boorman, 4021 Winterhaven St., Yorba Linda CA 92686, (714) 524-9483.

**Epson User's Group of Orange County.** Meets on 3rd Saturday of the month from 10 am to 12 noon at 2111 Main Street, Huntington Beach, CA 92648. Contact Richard A. Petersen. 7282 Mast Dr., Huntington Beach, CA 92646. (714) 536-6979.

## FORTH

**FORTH Interest Group, Los Angeles Chapter.** Meets 4th Saturday, 10 am, Hawthorne Public Library, 12700 S. Grevillea, Hawthorne. Contact Phil Wasson (213) 649-1428.

**FORTH Interest Group, Orange County Chapter.** Meets 1st and 4th Wednesdays, 7 pm. Call Noshir Jesung for info. (714) 842-3032.

**FORTH Interest Group, San Diego Chapter.** Meets weekly, Thurs., 12 noon, contact Guy Kelly (619) 268-3100 ext. 4784.

## HEATH

**Los Angeles HUG (Heath Users Group).** A support group for users of Heath/Zenith computers. Monthly speakers, software library, information exchange, newsletter. Meetings open to visitors. Meetings at 2309 S. Flower St., LA 90007, first Thursday of each month at 7 pm. Call Tom Davis for information at (213) 462-2642.

**LUV-A-HUG Heath /Zenith User's Group.** Meets 2nd Thursday of each month, 7pm, at Heath /Zenith Computers and Electronics, 22504 Ventura Blvd.


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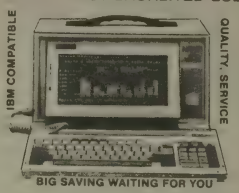


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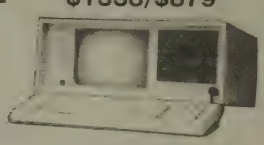

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# WHAT'S HAPPENING?

Check the MicroTimes Calendar of Events in this issue for computer-related classes, seminars, and shows in your area.


Woodland Hills, CA 91364. A users group dedicated mainly to the Heath/Zenith line of computers, but anyone interested in computing is welcome. Dues are $12/yr, which includes group newsletter and copying of public-domain software from extensive library of PC-, Z-100, and CP/M compatible software. For more info contact John Rotondi, between 10:00 am and 6:00 pm at (213) 874-9344. BBS (818) 772-0384.

### HEWLETT-PACKARD

**LA-SCRUG.** Hewlett - Packard Series 100 business computer user group. Demonstrations and seminars on HP software and equipment. Meetings at 5161 Lankershim Blvd., North Hollywood, 7-9 pm, 2nd or 3rd Thursday of the month. Contact Dave Mark, P.O. Box 60975, Pasadena, CA 91106, (818) 794-4969.

**Hands-On Computer User Society (HOCUS).** Meets the 1st and 3rd Thursday of the month, 6:30 pm, at 473 E. Colorado Blvd. Pasadena, 91101. Informal, hands-on problem-solving using various HP personal computers. Contact Dale Thorn c/o Logic Tree Computer Center, 463 E. Colorado Blvd., Pasadena 91101. (818) 440-9279.

**PPC Personal Programming Center.** Current interests include HP-41c, HP-71b and HP 28c. Meeting times and locations vary and are announced on the bulletin board. BBS number (213) 978-0024. For more information contact Emmett Ingram at (213) 498-2472.

### IBM

**The Greater South Bay IBM PC Users Association.** Any L.A. area PC or compatible owners are welcome to attend these meetings at the TRW cafeteria on Compton Blvd. Meeting time is 7:00 pm on the third Thursday of each month. For info call (213) 532-2123.

**Technical Users Group (TUG-NET).** For CP/M & MS-DOS PC users. Meets on the first Thursday of each month at 7:00 pm. Valley Plaza Park, Community Room, 12240 Archwood St., North Hollywood, CA. Contact Mike Faith - (818) 994-6567. DOS SIG meets 3rd Mondays, 7 pm, Sears S&L, Van Nuys. Call (818) 701-0512 for information. BBS (818) 882-6045.

**UCLA PC Users Group.** IBM PC or compatibles owners welcome to join us on the 2nd Tuesday of the month, 7 pm. Public domain library , SIGs, BBS, seminars and newsletters. NPI Auditorium, UCLA, Westwood Plaza, Level C. For more information call (213) 473-6668.

**Pasadena IBM User's Group.** Meets 3rd Wednesday of each month at Cal Tech, Bridge Building, Room 201. For more info send SASE to Steve Bass, 711 E. Walnut Street #306, Pasadena, CA 91101, (818) 795-2300.

**Inland Empire IBM/C64 User Group.** Major subjects are local area networks, small business software, data communications. Send SASE for free newsletter with dates and software library. Contact Winfried Hofacker, P.O. Box 988, Chino Ca 91708-0988.

**The Foothill Computer Club.** An IBM-PC users group. CCCUG — Crescenta-Canada-Compatible Users Group. P.O. Box 1265, La Canada, CA 91011, (818) 790-6672. Meetings 1st Wednesday of the month at 6:30 pm at the Glendale Federal Bank, 2350 Honolulu, Montrose, CA. For newsletter send SASE to above address.

**NOCC Lotus & Business SIG.** Subgroup of North Orange County Computer Club. Meets first Sundays at Chapman College in Orange, CA, 11:15 am. Lotus 1-2-3 and business application demos, speakers. Call to verify dates, address: Vance Joachim, (714) 998-8080. P.O. Box 3616, Orange, CA 92665.

**The Riverside IBM Computer Club.** Meetings at Computerland Riverside, Monday 7 pm. We specialize in software demonstrations, sharing of public domain programs, and mutual problem solving activities. Contact Jimmie E. Heidecke, (714) 685-5407 for info.

**Orange Coast IBM PC User Group.** A not-for-profit organization open to anyone with or considering the purchase of an IBM PC or compatible computer. Monthly meetings, usually on the last Saturday of the month, consist of one or two guest speakers, a short business session and a period for random access. OCIPUG has public domain and user supported software, a monthly newsletter and a bulletin board. Membership is $20 per year. Meetings at Orange Coast College, Science Hall, Costa Mesa, last Saturday of the month, 9 am–12 noon. Contact Tom Sutro, P.O. Box 6100-211, Costa Mesa, CA 92628, (714) 850-0474.

**Valley Computer Club.** IBM PC Users Group meets first Wednesday each month. The group is part of Southern California's original computer club. Its purpose is to distribute public domain software and exchange info on the PC. Meetings at 2006 W. Magnolia Blvd., Burbank, 7 pm. Contact Aaron Epstein (818) 769-1837.

**Kern Independent PC User Group (KIPUG).** Meets the 2nd Thursday of each month beginning at 7 pm at the County Superintendent of Schools Boardroom, 5801 Sundale Ave., Bakersfield. Contact Jim Harrer, P.O. Box 2780, Bakersfield, CA 93303, (805) 395-0223.

**Bits & Pieces IBM of Orange County.** Meets at 1130-A N. Kraemer Blvd., Anaheim, every Saturday at 10 am. Call John, (714) 630-8644 for more information.

**Ventura Personal Computer User's Group.** All MS-DOS and PC-DOS machines. Meetings 3rd Saturday 9 am-12 noon, Foster Library, 651 E. Main, Ventura. contact Mike Regan, President, 301 Dana Point, Ventura, CA 93004, (805) 647-8273.

**Thousand Oaks Personal Computer Club (TOPCC).** Meets fourth Thursday, except November and December (3rd Thursday), at CAL Lutheran Univ., 60 W. Olson Road, Thousand Oaks. 6:30 pm beginners, 7:30 regulars. Group is five years old and has approximately 150 members. Contact Bob Tracy, (805) 482-7092 for more information. BBS: (805) 499-8378.

**Southwest PC Users Group.** All computer users are welcome. Meetings 3rd Saturday of each month; call for meeting place. Christine Tripp, (213) 935-4105.

**Tulare County PC.** Meetings at Genesis Computers, 3rd Thursday each month. Call Roger Jenan, (209) 733-8204 for information.

**Claremont Computer Club.** This club is for any interested IBM PC or compatible users. Meetings start at 7:30 pm on the 3rd Monday of the month. Call (714) 626-2268 for meeting location and information.

**Apple/Valley Computer Club.** Member interests include Apple, Amiga, IBM and others. Meetings are held on the 2nd Wednesday of each month, 7:30pm, at Valley Presbyterian Hospital, meeting room #3, 15107 Van Owen, Van Nuys, CA. For more info, contact Dr. William H. Trent, 6502 Kester Avenue, #7, Van Nuys, CA 91411, (818) 988-1752.

**Osborne Komputer Owners Klub (OKOK)** is a microcomputer user group serving a variety of computers: Osborne, Kaypro, Commodore C128, IBM and clones. As an affiliate of FOG we serve both MS-DOS and CP/M operating systems. We offer monthly meetings, classes, public domain software library, electronic bulletin board and special purchase opportunities. Meetings second Wednesday of the month, 7:00–10:00 pm. Meetings held at the Altadena Public Library, 600 E. Mariposa, Altadena, CA. Contact Lionel Soracco, (818) 794-3243, or write OKOK, P.O. Box 40429, Pasadena, CA 91104.

**Pasadena IBM PC Users Group.** Meets third Wednesday of each month at Cal Tech Bridge Bldg.,

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*Complete System Includes:*

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| Sony 3½", 720K | $ 89 |
| Sony 3½", 1.44 MB | $105 |
| Toshiba 3½", 720K | $ 85 |
| Toshiba 3½", 1.44 MB | $102 |
| Fujitsu M2243AS, 85 MB | $950 |
| Micropolis 1325, 85 MB | $850 |
| Miniscribe M3650, Bare Drive | $290 |
| Miniscribe 6053, Bare Drive | $545 |
| Miniscribe 6085, Bare Drive | $749 |
| Seagate ST225 with Controller | $252 |
| Seagate ST238 with Controller | $262 |
| Seagate ST251 Bare Drive | $375 |
| Seagate ST4026 Bare Drive | $250 |
| Seagate ST4096 Bare Drive | $850 |

## MONITORS

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|---|---|
| NEC Multisync, EGA | $565 |
| Samsung, EGA | $360 |
| Samsung, RGB | $240 |
| Samsung, Amber with Tilt & Swivel | $ 74 |
| Sony 1303, EGA | $515 |

## PRINTERS

| | |
|---|---|
| NEC Pinwriter | $429 |
| NX-1000 | $179 |
| Okidata 192+, 80 col, 200 cps | $310 |
| Okidata 193+, 132 col, 200 cps | $490 |
| Epson LX-800 9 pin, 80 col, 180 cps | $195 |
| Epson FX-86E 9 pin, 80 col, 240 cps | $350 |
| Epson LQ-800 24 pin, 80 col, 180 cps | $460 |
| Epson FX-286E 9 pin, 132 col, 240 cps | $470 |
| Epson EX-1000 9 pin, 132 col, 300 cps | $550 |
| Epson LQ-1000 24 pin, 132 col, 180 cps | $575 |
| HP Laser Jet II | $1745 |

## PHERIPHERALS

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| 386 Mylex Mother Board | $1450 |
| 286 DTK Mother Board 6/10 MHz | $290 |
| XT Turbo Mother Board 4.77/8 MHz | $ 72 |
| Color/Composite/Graphic Adapter | $ 37 |
| Mono Graphic with Printer Port | $ 45 |
| EGA-256 Card | $ 99 |
| Multi I/O 5 Functions | $ 50 |
| Floppy Disk Controller, 2 ports w/Cable | $17.50 |
| RS232 Serial Port Adapter | $ 20 |
| Western Digital Controller, WDX1 with Cable | $ 60 |
| Western Digital Controller, WA2 with Cable | $110 |
| Game Card | $ 25 |
| Top Sega 100% Genoa EGA Compatible (800 x 600) | $175 |
| C7 Logitech Mouse | $ 69 |

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Room 201. Contact Steve Bass, 711 E. Walnut Street, Pasadena, CA 91101. (818) 795-2300. Send SASE.

**Long Beach IBM Users Group.** Meets second and fourth Wednesday of each month at 4601 E. 2nd Street, Belmont Shores. Contact Noel Roberts, president, 153 Argonne Ave., Long Beach, CA 90803. (213) 438-6515.

### KAYPRO

**Lakewood/Long Beach KUG** is a group of Kaypro computer owners dedicated to helping each other solve problems and share information and public domain software. The meeting is open to all. Meetings at Midcities Bank, 9025 Artesia, Bellflower, CA, 2nd Wednesday of each month; 7 p.m. Contact Melvin Pasley, 4566 Shadeway Rd., Lakewood, CA 90713, (213) 421-3094.

**Kaypro UG,** 3134 N. Palm Shields, Fresno, CA 93704.

**K-West, Orange County Kaypro users group.** Meetings 2nd Monday of the month, Glendale Federal Savings, 100 Newport Center Drive, Newport Beach.

**Club 16.** Meets once a month in Costa Mesa at 2790 Harbor Blvd., (CBS Store) to share knowledge of the 16 bit world. It is a small group so that everyone can get to know each other and share. Large public domain library. Contact Peggy Lloyd, (714) 645-9868 for information.

**LA Kaypro Users' Group.** Primarily CP/M users, all brands welcome. Meets 3rd Tuesday, 6:30-9:30, Beverly Hills High School, 241 Moreno Ave., 3rd floor cafeteria, near Olympic and Spalding. Contact Allyn Franklin or Barry Cole, (213) 278-3748 or (213) 390-3851 after 11 am please.

**Kayos Kaypro Users Group.** Kayos Kaypro User Group invites Kaypro and CP/M users to meetings at TRW in Redondo Beach, 6:30 pm, third Monday of the month. (213) 379-8339 for details.

**TUG-NET Kaypro and Osborne SIG** meets 4th Thursdays, 7 pm, Central Savings, 4464 Van Nuys Blvd., Sherman Oaks. Call (818) 882-1693 for information.

**Osborne Komputer Owners Klub (OKOK)** is a microcomputer user group serving a variety of computers: Osborne, Kaypro, Commodore C128, IBM and clones. As an affiliate of FOG, we serve both MS-DOS and CP/M operating systems. We offer monthly meetings, classes, public domain software library, electronic bulletin board and special purchase opportunities. Meetings second Wednesday of the month, 7:00-10:00 pm. Meetings held at the Altadena Public Library, 600 E. Mariposa, Altadena, CA. Contact Lionel Soracco, (818) 794-3243, or write OKOK, P.O. Box 40429, Pasadena, CA 91104.

**Kaypro SIG.** Meets on the first Sunday of the month, 1:30 pm, at Chapman College. Contact Tom Gramafa (714) 995-9227. BBS: (714) 998-8080.

### LEADING EDGE

**OCTIPUG-SIG.** Forming Leading Edge user's group. Will organize to teach DOS, Framework, d-BASE III, utilities and public domain software. Meeting times and address to be announced. Contact Michael Banyacki, 24992 Spadra Lane, Mission Viejo CA. (714) 770-3172. Leave name and phone number.

### LOTUS

**Los Angeles Lotus Users Group.** Demonstrations, problem-solving, third-party applications, etc. For Lotus 1-2-3 and Symphony. Informal and fun. 7-9 pm. Burbank church of Religious Science 3rd Thursday each month. Take 134E to Pass. N. 1 block. Call Don Roark, President (818) 905-1441 for information.

### MACINTOSH

**Los Angeles Macintosh Group (LAMG)** Be a part of the best Mac group in So. Calif. Many SIG and local groups to choose from including desktop publishing, OMNI, business, education and more. Monthly main meeting at McKinley Elementary School, Santa Monica Blvd. at Cloverfield, Santa Monica. Membership $25 annually includes 12 issues of MacDigest newsletter, access to public domain library, discounts at local stores. Call Eric Anderson, (213) 278-LAMG for information.

**Ventura County Macintosh Club** Mac and Lisa users invited. Membership $21/yr.; newsletter, software library, discussions and ideas. P.O. Box 7754, Oxnard, CA 93031, (805) 983-1610, (805) 499-2824.

**Mac Valley Users Group.** For $20/yr. membership fee you too can enjoy meetings chock full of software/hardware presentations, public domain software library, Mac articles index, software and accessory raffles, and help hotline. Broad range of users, very friendly to novices. Meetings at Burbank High School Cafeteria, Burbank Blvd. at 3rd St., Burbank, CA, third Tuesday of the month, 7:30 p.m. Contact Ruth Stever, P.O. Box 4297, Burbank, Ca 91503, (818) 848-1277.

**MAC-HACers.** Macintosh computer club for Hughes Aircraft employees only. Meetings 3rd Wed. each month, H.E.S.E.A. Club House, 1216 Imperial, El Segundo, CA 90745, across from LAX, 5 pm. Contact Bud Grove, (213) 606-2212, 5am-3pm, (213) 549-9664.

**Orange Apple Macintosh Group.** The Macintosh Meeting of the Orange Apple Computer Club meets 1 pm-4 pm the 1st Saturday of each month in the Science Hall at Orange Coast College, Costa Mesa. We have the best of public domain software for the Mac, and several fun special interest groups which include Fast Start, Mac Modem, and Deciphering Mac Public Domain. For further info, call (714) 770-1865.

**Mac Orange.** Monthly newsletter, special intrest groups, monthly meetings. $20 annual dues. Meetings 3rd Wednesday of each month, 7:30 pm, Johnson Center, Santa Ana College, Bristol at 17th. Novices SIG meets at 7:00. For info write Box 1830, Santa Ana, CA 92701, or call (714) 542-9753.

**MacBuddhist.** Learn about computer assisted dharma study and application to daily living. Network of on-line Bodhisattvas sharing material crossing sectarian lines. Monthly meetings, last Saturday of the month. Write: 2605 N. Beachwood Drive, Los Angeles, CA 90068, (213) 464-3599.

**Corporate User Groups SIG of Los Angeles Macintosh User Group** establishes communication between leaders of Macintosh User Groups of companies in the greater Los Angeles area. The main purpose of the group is to share information on Macintosh use in corporations. It also consults company recreation clubs in starting and supporting company Macintosh groups. Contact Charles Shipp, (213) 970-6300w, (213) 833-9186h, for more information.

**San Gabriel Valley Mac Users Group.** Meets once a month to disseminate information about the Macintosh. Meetings are held on the first Thursday of every month at the City of Hope in Duarte, 7:30 pm in cafeteria complex Room B. The SGVMUG has special interest groups such as Power Users SIG and a Novice SIG. Public domain library, monthly newsletter. Membership is $20 per year. Contact Frank Chavez on the 24 hour information line (213) MUG-ICON, or write SGVMUG, P.O. Box 792, Sierra Madre, CA 91024.

**Macintosh Computer Society.** General meeting on the 1st Thursday of each month at 23 Civic Center Drive, Northwest corner of Santa Ana Blvd and Rose Street. Meeting time 7:30 pm. Membership $20.00 per year. FREE help / education meetings on the 2nd and 3rd Tuesday of each month at Progressive Savings, 19900 Beach Blvd., Huntington Beach, 7:15 pm. Our huge library contains the best of Public Domain software for all the Mac family. For further info, call Robert at (714) 840-1238 or mail to 17661 Falkirk Lane, Huntington Beach, CA 92649.

**Rockwell International Macintosh Users' Group (RIMUG).** Meets 1st Tuesday of each month 12 noon at 2770 E. Carson St., Lakewood, CA. Al Nercessian, president: 8511 Beverly Pk. Pl., Pico Rivera, CA 90660. (213) 420-4819.

**South Bay Apple Mac User Group.** Meets last Wednesday of the month, 7:30 pm. Contact Gary Fortune at (213) 316-7738 for information. BBS: 534-4311.

### MORROW

**West LA Morrow User's Group "The Morrow Minority.** 40 dedicated members, with special emphasis in WP; PD library. No dues, but $1 at door to pay for refreshments. Some classes and informal newsletter. If new, call to reserve space: Dr. Bernice Ennis, (213) 276-9096, 1833 Franklin Canyon Dr., Beverly Hills, CA. Meetings 2nd Wednesday of the month.

**LA Morrow User Group.** Meets 3rd Thursday each month, North Hollywood Recreation Center, 11430 Chandler Blvd., North Hollywood. Contact Jack Byers, (818) 347-7283 for information.

### NEC

**Orange County NEC Users Group (OCNUG).** Dedicated to NEC-APC computers, CP/M-86 & MS-DOS. Always room for any experience level. Meets 3 pm, third Saturday of the month. 6642 Lenore, Garden Grove, CA 92645. Call John Bingel at (714) 897-7656 for more info.

**The Los Angeles Area NEC APC Users Group** meets on the first Saturday of each month at 3 pm at the I/O Interface Computer Mart, 5241 West 89th St., Los Angeles, CA 90045. Telephone (213) 410-9824. There is no meeting in January, and occasionally a meeting may be cancelled or postponed, so it is best to call before coming.

### NETWARE

**Orange County Network Users Group (OCNET).** All users, consultants and business people interested in learning and sharing information about Netware are invited to join. We're now meeting on the second Monday of each month at First American Title, Santa Ana, CA. For more information call Mark at (714) 955-0616.

### OLIVETTI

**Olivetti PC User Group** forming. Send SASE to Stan Cory, 29500 Heathercliff Rd. #86, Malibu, CA 90265, or call (213) 457-3879.

### OMNIS 3

**Omnis 3 User Group.** Meets every third Wednesday of the month at Grant St. Elementary School in the auditorium. Address is 2368 Pearl St., Santa Monica. Time is 7:30 pm. The use of Omnis3 and Omnis 3+ in data processing information management systems is covered, from setup to advanced features. Expert and novice welcome. Call Zachary Sempers at (818) 701-1355 for information.

### OPEN SYSTEMS ACCOUNTING

**Open Systems Accounting, SoCal User's Group.** OSASCUS would like to extend an invitation to users, consultants and business people interested in sharing information regarding OSAS. We'll discuss OSAS, single user and networked systems and more! We meet on the fourth Wednesday of the month at Wyle Laboratories, Irvine, CA. For more information call Mark at (714) 955-1724.

### OSBORNE

**TUG-NET Kaypro and Osborne SIG** meets 4th Thursdays, 7 pm, Central Savings, 4464 Van Nuys Blvd., Sherman Oaks. BBS (818) 882-6045. 8-N-1. 1200 baud. 24 hours.

**Osborne Komputer Owners Klub (OKOK)** is a microcomputer user group serving a variety of computers: Osborne, Kaypro, Commodore C128, IBM and clones. As an affiliate of FOG, we serve both MS-DOS and CP/M operating systems. We offer monthly meetings, classes, public domain software library, electronic bulletin board and special purchase opportunities. Meetings *second* Wednesday of the month, 7:00-10:00 pm. Meetings held at the Altadena Public Library, 600 E. Mariposa, Altadena, CA. Contact Lionel Soracco, (818) 794-3243, or write OKOK, P.O. Box 40429, Pasadena, CA 91104.

**Osborne National Users Group** meets 2nd Fri./mo. at 7:30 pm at Wizard of Oz, 20630 Lassen St., Chatsworth, CA 91311. Contact Art Schlefstein, (818) 709-6969.

### PARADOX

**Southern California Paradox Users Group.** Anyone with an interest in the relational database Paradox please send an SASE to Brian Smith, 350 Palos Verdes Blvd., Redondo Beach, CA 90277. Meetings are being held in LA and Orange County.

### RADIO SHACK TRS

**South Bay Color Computer Club** TRS-80, TDP-100, Dragon Meets third Friday of the month at Mercury Savings, 22939 Hawthorne Blvd., Torrance. Info: Andrew Corlett, 1435 W. 172nd St., Gardena, CA 90247. (213) 538-8394.

**OCTUG-Orange County TRS-80 Users Group.** Meets the 3rd Sunday of each month in the community room at "The City Shopping Center" in Orange. The room is near the green entrance of the mall (N.E. corner). MS-DOS SIG (Special Interest Group) begins at 11:30 am. General meeting begins at 1:30 pm. Devoted to the Tandy line of computers and compatibles. Come on down and see what it's like. For more info, contact Franco Collino, (714) 750-0887.

**San Gabriel Valley TRS-80 Users Group.** Supporting users of TRS-80 and Tandy computers. Meets 2nd Friday of each month at Arcadia Park Senior Citizens Center at 7:30 p.m. Monthly newsletter, various SIGs, lotsa fun & info. Contact Dan Dreseilhaus. (818) 914-5831 days.

**VTUG (Valley TRS-80 User Group).** Devoted to users of TRS-80 Model I, II, 4, 4P, LNN or MAX-80. Speakers, presentations, raffle drawing, refreshments. No admission or membership fee, new members welcome. Meetings at Glendale Federal Savings, 7129 Topanga Canyon Blvd., Canoga Park, 3rd Thurs., 7:30 pm. Contact Fred Blechman, (818) 346-7024.

**VTHG Valley TRS80 Users Group.** Meets first Friday of the month at 7:30 pm, Valley Plaza Recreation Center, 12240 Archwood St., North Hollywood, CA. One block south of Vanowen St. Four blocks west of Laurel Canyon Blvd. RAM SECTION, bring all the questions, ideas and information that you have and share them. ALSO, don't forget to bring your blank diskette to exchange for the new club disk from Eric. For more information call (818) 982-0467 or write P.O. Box 9747 North Hollywood, CA 91609.

**COCO 1-2-3, Color Computer, Models 1,2,3.** Meets second Friday of the month at 7:30 pm, Valley Plaza Recreation Center, 12240 Archwood St., North Hollywood, CA. One block south of Vanowen St. Four block west of Laurel Canyon Blvde. RAM SECTION, bring all the questions, ideas and information that you have and share them. ALSO, don't forget to bring your blank diskette to exchange for the new club disk from Paul For more information call Harry Tischler (818) 997-6000 or write 7560 Woodman Pl. No. E8 Van Nuys, CA 91405.

**Tandy 1000 (The MUG)** Meets fourth Wednesdays, 7 pm, 9027 E. Artesia, Bellflower, CA. Contact Dick Sherwood, 4014 Centralia St., Lakewood, 90712, (213) 421-4014. The MUG RBBS (213) 425-0022, members only.

**Color America.** Radio Shack color Computer SIG meets 2:30-5 pm on the third Saturday

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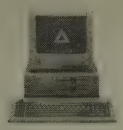

- dual floppy $750
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- **D-2 30 MB 640K best price**

Price includes monitor, keyboard, DOS & BASIC.

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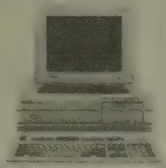

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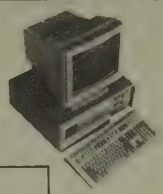

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• PRICE INCLUDES MONITOR, KEYBOARD, VIDEO CARD, DOS, BASIC

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- w/ 20 MB H/D .... $2199
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Price includes monitor, keyboard, video card, serial & parallel ports,

NEW 12 MHz clock

### EPSON

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| EX 800 ..... | $429 | LQ 500 w/tractor . . . | $389 |
| LX 800 ..... | $199 | Laser Printer.... | $1376 |
| LQ 850 ..... | $519 | EX 1000 ..... | $459 |
| LQ 1050 .... | $669 | LQ 800 ..... | $353 |
| FX 86E ..... | $299 | LQ 1000 ..... | $535 |
| FX 286E .... | $429 | LQ 2500 ..... | $849 |

### CITIZEN PRINTERS

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| Premier 35 ..... | $449 |
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The portable replacement for the desktop PC 12MHz 80286 processor.

- 2 internal IBM compatible expansion slots.
- 40MB hard disk (29 ms access)
- Built-in EGA display system

**T3100/20**

AT performance in a sleek, lightweight portable.

- 8MHz 80286.
- 20MB hard disk.
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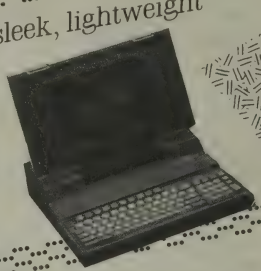

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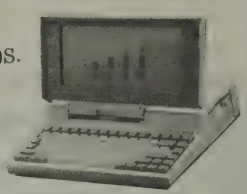

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of the month at Rosemead Community Center, 3936 N. Muscatel Ave., Rosemead. Contact Mark Randall, 2227 Canyon Rd., Arcadia, CA 91006, (818) 355-6111.

**The Los Angeles-Wilshire Color Computer Users' Group**, a TRS-80 Color Computer Users' Group, meets the 2nd Saturday of each month, 12:30 pm-5:30 pm in the Felipe de Neve library's community room, 2820 W. 6th, Los Angeles. Call Milton, (213) 558-4909.

**United Computer Federation-San Fernando Valley Chapter.** Meets the fourth Tuesday of each month at the Tarzana Radio Shack, 18545 Ventura Blvd., 1/2 block west of Reseda Blvd. Meeting starts at 7:30 pm. Meetings are open to the public and all are welcome. The UCF is a network of Tandy Color Computer user groups. For more information phone Pete Ellison, chapter president, at (818) 840-8902.

**United Computer Federation-Los Angeles Chapter.** Meets the fourth Thursday of each month at the Church of Christ recreational building, corner of Clark and Park streets, just off the 91 freeway in Bellflower. Meeting starts at 7:30 pm. Meetings are open to the public and all are welcome. The UCF is a network of Tandy Color Computer user groups. For more information phone Gary James, chapter president, at (213) 420-7632.

**United Computer Federation-Orange County Chapter.** Meets the second Sunday of each month at the Mercury Savings building on Edinger Ave., 1 block north of Beach Blvd. in Westminster. Meeting starts at 1:30 pm. Meetings are open to the public and all are welcome. The UCF is a network of Tandy Color Computer user groups. For more information phone Allen Nedrow, chapter president, at (213) 692-3073.

### SBT

**The Orange County SBT Users Group** is being formed and is seeking members who are interested in an atmosphere that promotes the better understanding and more efficient use of the SBT Accounting Software. Contact Jay Rubin, P.O. Box 5145, Newport Beach, CA 92662, (714) 720-8171.

### SANYO

**Sanyo-MS/DOS** Table Top Computers, 14717 South Prairie Ave., Lawndale, CA 90260. (213) 679-1151.

**Zenith-Sanyo Users Group** meets 10 am every first and third Sunday at 401 S. La Brea Ave., Inglewood, CA 90301. Call Alan Gillen, (213) 674-0318 for information.

**Sanyo Users Group of LA (SUGLA).** Devoted to users of Sanyo MBC 550/555 micro business computer. Guests welcome. Dues $15/yr. Speakers, presentations, public domain software library, information, new hardware and software reviews. Meetings 2nd Wednesdays, 7 pm, CAL State University, LA, Student Union (Bldg. #5), 4th floor in South Pasadena Room. Contact Fred Blechman, (818) 346-7024.

### TEXAS INSTRUMENTS

**LA 99er Computer Group.** TI 99/4A support, classes and SIGs, large software library, monthly newsletter. Demonstrations, bulk purchase discounts on hardware, software and books. A good group to join. Meetings at Torrance Public Library, 3301 Torrance Blvd. (corner of Madrone), Torrance, CA. 4th Wednesday of the month, 7 pm. Contact Terrie Masters, 148 S. Maple Drive, Beverly Hills, CA 90212, (213) 271-6930.

**The TI-99 Club.** Yes, there still are a lot of 99's and 99/4a's around. If you own one, then get in touch with these people. They have good info for TI owners. Meetings take place at the Westminster Community Center on the third Thursday of every month at 7:00 pm. For

**TI-West (Los Angeles West Side Area).** Meets at DeCoursey Engineering Laboratory, 11828 W. Jefferson Blvd., Culver City, on the 3rd Monday of each month. For information, contact Lew Howard at (213)397-9668.

**San Fernando Valley TI 99/4A User Group.** Library, Workshops, Newsletter, How To? For further information call Jim Edwards, (818) 248-9558, 5-10 pm. Meetings 2nd Wednesday of the month, 7:30 pm, Doctor's Conference Room, Sherman Oaks Community Hospital, 4929 Van Nuys Blvd.

**San Gabriel Valley TI 99/4 Users Group** meets 1st Wed./mo. at 6:30 pm in the Covina Parkway, West Covina, CA. Contact Tom Padilla, (213) 330-8240.

**TI Riverside UG.** Supporting the TI 99/4A. Meetings at Collett School, 3rd Thursday, 7 p.m. Contact Ed Butcher, 3523 McKinley St., Riverside, (714) 686-0336.

**Antelope Valley TI UG.** TI User Group. Meetings at Palmdale Culture Center, 3rd Wed., 7 pm. Contact Len Rouw, 38540 26th St. East, (805) 947-6270.

**El Toro 99 Home Computer Users Group.** The ET-99 Home Computer User Group meets to demonstrate programs, equipment, and discuss techniques. Contact Ken Baldwin, 23065 Sonoita, Mission Viejo, CA 92641, (714) 855-0480. Meetings at Mercury Savings and Loan, 1-5 and Lake Forest, El Toro, 2nd Saturday of each month 9 am - 12 noon.

**Tri-Valley 99'ers.** We have what you're looking for! Interesting guest speakers, software/hardware demonstrations, large group library, monthly newsletters. We serve the entire Conejo Valley and beyond! Contact Steve Mehr (805) 496-8725 or Chuck Salvatore, (805) 527-4129 for more information.

**BUG (Bres 99er's Users Group).** Meets the first Monday of the month at 7:30 pm at the

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Western Federal Savings meeting room, #10 La Habra Fashion Square, corner Beach and Imperial, in La Habra. For further information call Bob August at (714) 871-3405.

**San Fernando Valley Texas Instruments Professional Computer User Group (SFV TI-PRO USER GROUP).** Meets at 9017 Reseda Blvd. Suite #212, Northridge, on the 3rd Sunday of each month at 10:00 am. We serve the entire San Fernando and Santa Clara Valleys. Group meets to discuss: how-to techniques, programs, equipment and software. All are welcome —bring a friend. TI-Pro/AutoCAD Users are also welcome. For more info, contact Marcus Swed at (818) 993-3151 during the day and at (818) 366-0886 evenings.

**The Pomona Valley 99ers Computer Users Group.** Meets locally every month on the second Monday of the month. Anyone interested in home computing is welcome to come to our meetings at 7:00 pm. We meet at the Cortez Elementary School at 12750 Carissa Ave., Chino, which is south of the Pomona Freeway and west of Mountain Ave. There are demos of hardware and software. Mostly for the Texas Instruments 99/4A computer. Lots of discussion. We try to educate and stimulate interest in computer literacy and programming. If you become a member of this non-profit group you'll get a monthly newsletter and be able to get copies of the programs in the large club library of public domain software.

## TIMEX-SINCLAIR

**Timex-Sinclair.** South Bay and West Side groups. Call John W. Petersen at (213) 545-9581 anytime or Dr. George Kuby (213) 201-2014 after 3 pm for more information.

## TOMY

**Tomy Tutor computer user group.** Contact Eugene C. Dinovo, P.O. Box 37, Sepulveda, CA 91343.

## VICTOR

**West Los Angeles Victor Users Group (WLA-VUG).** Victor 9000 users - you are not alone! Meet other users. Free V9000 software & purchasing discounts for members. Victor-specific bulletin board (818) 989-2216. Meetings at 8651 Olin St., LA 90034, 7 pm, 3rd Thursday, every month except December. Contact Roger Goodman, (213) 558-8363.

**Orange County Victor 9000 User Group.** Meets fourth Wednesday of the month at Mayward Siler & Assoc., 12062 Valley View, Suite 210, Garden Grove, CA 92645. Contact Don Henderson, 1201 Drayton Way, Tustin, CA 92680. Phone: (714) 730-6015.

## WANG

**Wang WP Users Group.** Meets 4th Thurs. of each odd month, 6 pm. Newsletter, speakers,information network. Call for meeting place: Steven Hirsh, (213) 255-5515, or write 2858 El Roble Drive., Los Angeles 90041.

## ZENITH

**Zenith-Sanyo Users Group** meets 10 am every first and third Sunday at 401 S. La Brea Ave., Inglewood, CA 90301. Call Alan Gillen, (213) 674-0318 for information.

## WORDSTAR

**WordStar User Group LA.** Now forming. for all WordStar users, regardless of computer. Discussion, lectures, presentations, & demos, including enhancement products. Shortcuts & discount purchases. All experience levels. Call for info about first meeting: Ken Adler, (818) 501-4798, (818) 783-4533.

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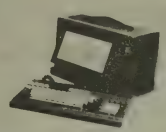

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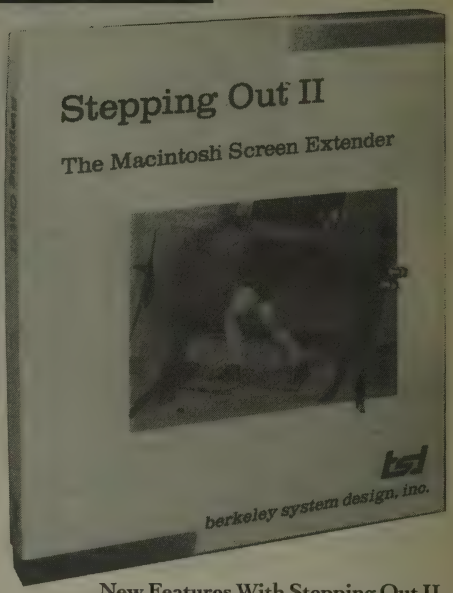


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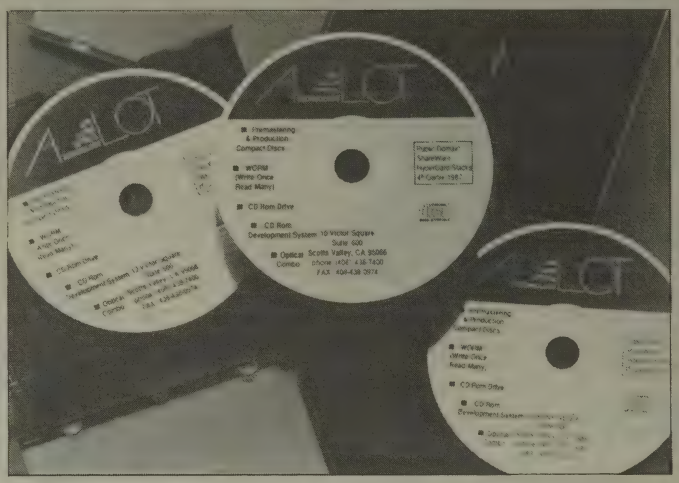

### Software On CD-ROM From ALOT

Arc Laser Optical Technology (ALOT) offers public domain, shareware and stackware on CD-ROM for the Mac. The ALOT disk provides 100 megabytes of public domain and shareware software, along with 10 megabytes of *HyperCard* stacks. Purchased alone the price of the disk is $300. When an ALOT CD-ROM drive is purchased for $1,190, the disk is free. Arc Laser Optical Technology, 10 Victor Square, Suite 600, Scotts Valley, CA 95066. (408) 438-7400.

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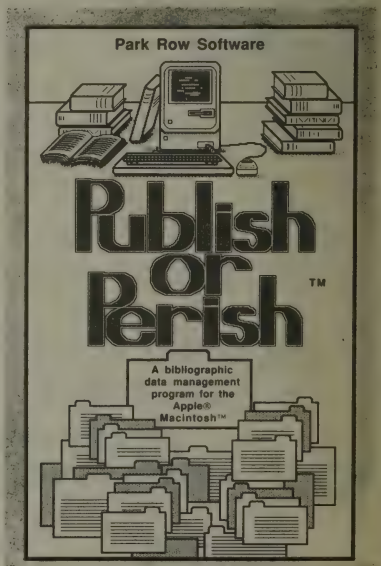


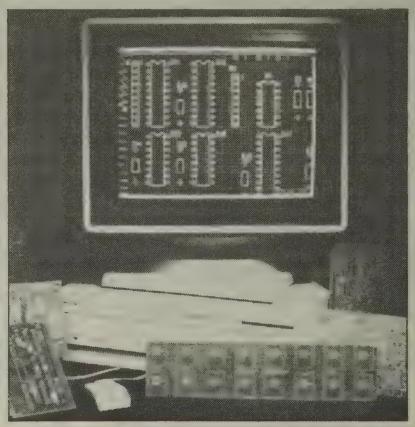

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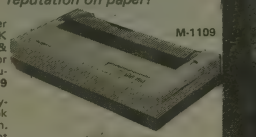


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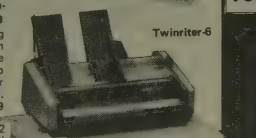


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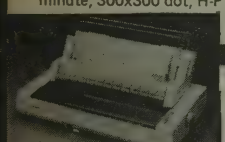

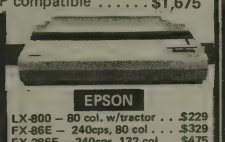

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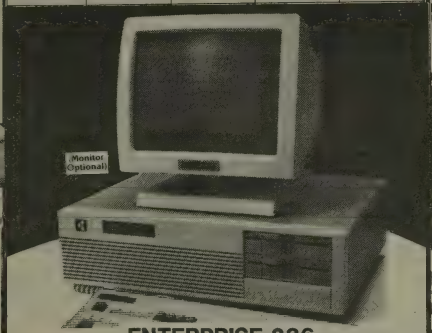


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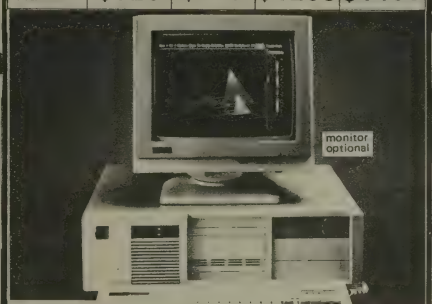


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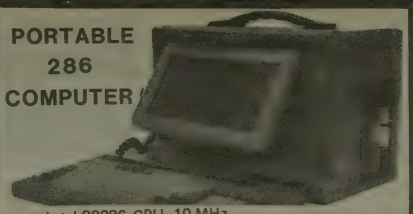

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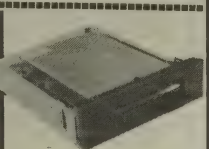

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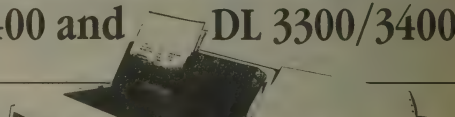

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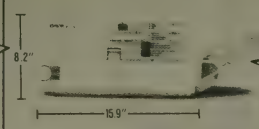


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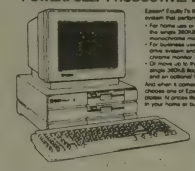

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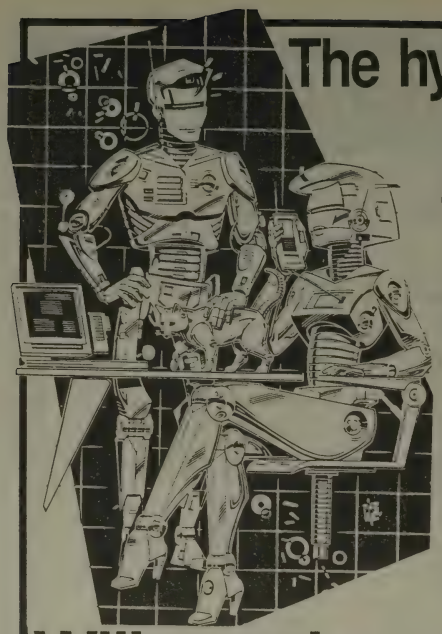

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# DVORAK'S LAST COLUMN

# Getting Nowhere Fast:

## *Dvorak's Tape Log From The S.F. Macworld Exposition*

**By John C. Dvorak**

Many people wonder what a technology writer has to do to produce a column. What seems to be the most interesting aspect of the job is actually the dullest: attending shows and exhibits. The following are actual notes taken from the Pearlcorder L200 microcassette recorder used by me in my tour of the Macworld Exposition in San Francisco. The numbers refer to the index number. This information is not to be used for the purpose of gambling.

**000** — "Going across the bridge the temperature is 6 degrees centigrade." Some metric nutball put up a billboard telling me so as I drove up the ramp to the bridge. I didn't have a calculator to tell me what the real temperature was, but I knew it was cold. It was raining too. Welcome to San Francisco.

**017** — "Considering the NFL Championship games were on TV, it's amazing how packed the parking lots are. San Francisco can't handle a popular show."

**027** — "Some huge fat guys are leaving the show. Too bad the Vikings didn't have them today on their team."

**032** — "All the headlines in the San Francisco papers are about Jimmy the Greek and his comments about black athletes. This town doesn't know what's interesting."

**My recommendation: If you want to learn something about what's happening, go to the local Macintosh Users Group meetings. Skip these events.**

**039** — "There's a girl with a ring in her nose!"

**041** — Entering the show floor. "I see a bunch of clowns wearing a dumb little top hat that says I want to be on TOPS. I can see there's already a high dork level here. This is a good sign."

**091** — Wandered to TOPS exhibit to witness one of those dumb "stage" presentations. It was pathetic. Then I wandered over to see Chris Crawford and grab a copy of his newsletter. Roamed aimlessly.

**143** — Saw part of a tape of the dull TV show, the Personal Computer Show. It featured PC Magazine West Coast Editor Jared Taylor telling us how Interleaf Publisher was "meaningful integrated software." Like meaningful, man.

**154** — "Goldmine Publishing here. There's the owner giving out pinup posters of herself. Kind of an interesting way to get a date."

**191** — Saw Robert "Bob" Wiggins seated on a couch at his Macintosh Business Letter booth.

**212** — "For $695 you can buy a Lisa from Sun Remarketing. An Apple II for $395! These guys have some sort of advanced type thinking."

**230** — "There's WingZ with a bunch of callipygious gals wearing jumpsuits hanging around. You have to wait in line for an eternity to see a demo. Forget it." Began to notice that I wasn't getting much substantive information from the show. Pretty dull these notes.

**235** — "There's another girl with a ring in her nose! What gives?"

**240** — "Microsoft booth empty except for the crowd around a Microsoft Works Demo."

**252** — "At MacUser booth. No bags left." Louise Kohl makes snide remark about her being left holding the bag.

**293** — "Huge crowd at the Letraset booth. Gawkers. I can't figure out what's wrong with these people that they are attracted to these boring demos."

**328** — "Going past expensive Lotus booth. Nobody here. Modern Jazz!? Yeah, they're going to flock to that."

**340** — "Adobe has a huge crowd. They're showing something on a huge Mitsubishi screen. The whole screen is purple. Totally out of convergence."

**369** — "Just bumped by a jerk with a TOPS hat on. A large defensive end type. Should have been at the Minnesota game."

**419** — "Here's some weird wooden boxes that you can put a Mac in to hide them if you're totally humiliated by owning a Mac."

**428** — "Here's one: 'Practical artificial Intelligence' from Human Intellect Systems. Yeah, right."

**444** — "Here's another good one. Fortran on the Mac. Hahaha."

**452** — Bumped into MacUser Science Officer Steve Bobker. He was wearing a suit and hard to recognize. After exchanging some slanderous comments about various companies, he dragged me around to show me the hot stuff.

**503** — Bobker showed me the Smethers-Barnes prototyping software so people can design vaporware.

**537** — Saw a DOS emulator. Sign said "DOS No Longer Greek to Mac." Unfortunately the guy in the booth spoke only Greek. Some passerby had to explain to me how it worked.

**I go over the tape log to see what I learned from another day at another show. I discover that I learned nothing. For this I get paid? Worse. For this, show promoters make millions.**

**545** — After an hour I'm back on the other side again and there's Wiggins still sitting on the couch. I have to associate with these people. Sheesh.

**548** — Bobker tells me to go to the private SuperMac demos in the back halls of Moscone. I head that way.

**555** — "Gee there's food here, cokes, pies. Great." This idea is a real coup. There's no security, either. Anyone could have come back here and had a great meal and an easygoing demo of a slug of new products. Noteworthy is a new telecom package called *Acknowledge* and the latest *Pixel Paint* plus a host of other goodies. These guys have to be watched.

**560** — "Summary. The San Francisco Edition of the Macworld Exposition is history. It was big and far better than the Boston hothouse version of the show back east. Most notable were the dozens of parties including a dud reception held by Apple and a weird *MacUser* dance in a screwball auditorium. There were more suits than ever before and this show made it obvious that the world of the Macintosh has wrested control from the IBMers in leading the way to the future."

**570** — I head back to witness the Cleveland Browns choke in the AFC Championship. I take my bag of literature and put it in the closet. I go to the Mac, boot it up. I figure I'll review some software. Maybe write the column. Hmmmm. I see a copy of *Crystal Quest*. I rack up 1.8 million. I figure I've done enough work for one day.

I go over the tape log to see what I learned from another day at another show. I discover that I learned nothing. For this I get paid? Worse. For this, show promoters make millions.

My recommendation: If you want to learn something about what's happening, go to the local Macintosh Users Group meetings. Skip these events. □

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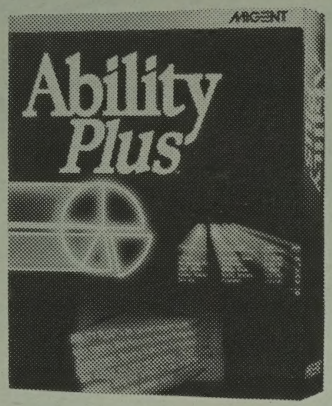


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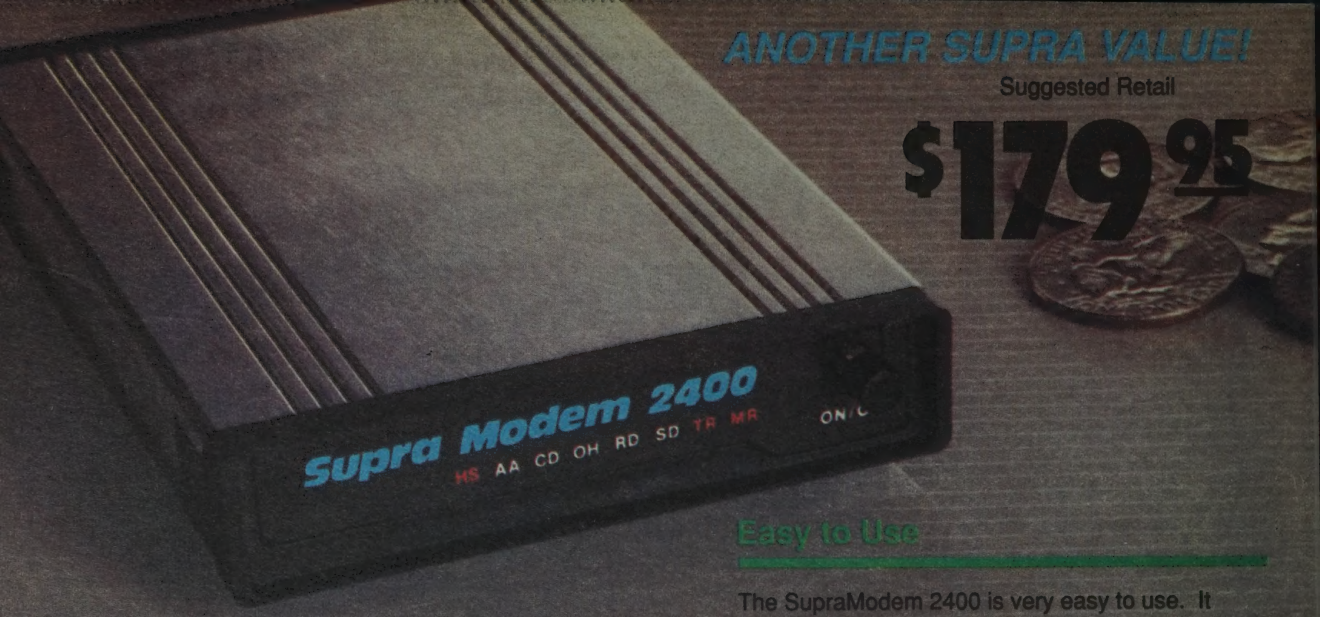


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